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ORIGINAL ARTICLES.

A SUCCESSFUL PORRO-MÜLLER OPERATION FOR MALFORMATION OF THE UTERUS AND VAGINA.

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THE patient, a mulatto woman, was brought to me in September, 1890, by her physician, Dr. James L. Kite, of Philadelphia, for an opinion as to the possibility of delivery by the natural passages. The history of the case was as follows:

Sophie D., aged twenty-five years, born in Virginia, and married for one year. She was at the time seven and a half months advanced in pregnancy. She was healthy as a child and began to menstruate at seventeen years of age. Her periods occurred regularly, lasting two days, and were always followed by leucorrhœa which continued for from three to seven days; during the last three years, however, the vaginal discharge has increased in quantity. At the time of the menstrual flow she suffered from the reflex symptoms common to all women; there was, however, no great pain at any time. She was examined six years ago by her family physician, who told her that owing to absence of the womb she could never menstruate. Her statement that she had menstruated every month was discredited. She was married in September, 1889; pregnancy occurring in January, 1890. During her entire pregnancy there was hæmorrhage from the vagina every twenty-eight days.

On examination I found the vagina to be only two inches in length, and ending in what at first seemed to be a blind *cul-de-sac*. More careful manipulation, however, revealed a number of small elevations radiating in all directions from a slight depression in the centre of the vaginal pouch. This I took to be the sinus through which the vagina communicated with the uterus. Examination through the rectum showed the cervix to be above the vaginal *cul-de-sac* and separated from it by a distance of at least half an inch.

Taking these anatomical conditions of the organs into consideration I decided that I was dealing not with atresia but with a malformation of the upper segment of the vagina and the lower part of the uterus. This anomaly had so altered the normal relations between the organs that delivery by the natural passages was impossible. I, therefore, did not feel justified in advising the patient to allow nature to take its course, especially as I was uncertain, prior to the operation, as to the character of the structures uniting the vagina with the uterus.

And, again, as the dangers of a section are but slight, in the hands of an abdominal surgeon, I urged the patient to undergo the Porro operation. Prior to operating the case was examined by Drs. Robert P. Harris and J. M. Baldy, and my colleagues Drs. E. E. Montgomery and Barton Cooke Hirst, all of whom concurred with me in the diagnosis and in the advisability of a section.

Operation.—The operation was performed in the amphitheatre of the Philadelphia Hospital on October 17, 1890, in the presence of a large number of physicians and medical students. I was assisted by Drs. Barton Cooke Hirst and E. E. Montgomery, and my resident physician, Dr. Bitting.

The patient was prepared in the usual manner employed for all forms of abdominal operations. The only instruments used were a scalpel, six hæmostatic forceps, one pair of scissors, a needle-holder, and needles and sutures for uniting the abdominal wall and for stitching the parietal peritoneum to the stump, four surgical sponges, Tait's uterine constrictor, and a rubber ligature.

Abdominal incision.—The incision was begun at 11.18 A.M. It extended from within three fingers' breadth of the pubes to about one inch above the umbilicus and was six inches in length.

Eversion of the uterus.—At 11.20 A.M. the uterus was everted. Before the organ was delivered it was given a quarter of a rotation upon its long axis so that its antero-posterior diameter instead of the transverse presented at the abdominal opening.¹ After eversion of the uterus dry bichloride towels were placed around the cervix so as to close the abdominal cavity, thus preventing the access of fluids and the escape of the intestines.

Constriction of the cervix.—At 11.21 A.M. a rubber ligature was thrown loosely around the cervix and the ends secured by hæmostatic forceps. Dr. Hirst then encircled the neck of the uterus with his hands, making, however, no pressure.

Incision of the uterus.—At 11.21 A.M. an opening large enough to admit my finger was made into the anterior part of the body of the uterus. This opening was then rapidly enlarged by tearing the muscular fibres with my fingers.

Extraction of the child.—At 11.21 A.M. the membranes were ruptured, the child grasped by the hips, delivered, and the cord cut after constricting it with a pair of forceps. The child was then handed to

¹ This plan was suggested to me by Dr. E. E. Montgomery.

Dr. Montgomery, who placed it in the incubator. The liquor amnii was caught in a basin held by Dr. Bitting when the membranes were ruptured. After the child was delivered Dr. Hirst tightened his grasp around the cervix, thus absolutely controlling the hæmorrhage until I made taut the rubber ligature and kept it in that condition by securing the ends close up to the cervix with forceps.

Removal of placenta and membranes.—At 11.22 A.M. the placenta was detached and removed along with the cord and membranes. The uterus at once contracted strongly.

Sutures.—The abdominal wall was closed with silkworm-gut, using four sutures to an inch. I used a curved needle threaded with catgut to stitch the parietal peritoneum to the stump.

Removal of the uterus.—Tait's constrictor was now applied to the cervix below the rubber ligature, and the wire tightened, the constricting band of rubber being then removed. The uterus was amputated close up to the wire, leaving, however, enough tissue for the stump. It was 11.40 A.M. when the uterus was removed, just twenty-one minutes and forty seconds from the time I began my incision into the abdominal wall.

History of the case subsequent to operation.—The pulse after the operation was eighty, and at no time during convalescence exceeded eighty-eight. The recovery was afebrile, the stump coming away on the twenty-first day after the operation. A free movement from the bowels was induced by a dose of salts twenty-four hours after the operation. The feeding and general care of the patient were the same as usually carried out during convalescence after abdominal operations not involving the intestinal canal.

Child.—The baby, a female, weighed at delivery six pounds and ten ounces; its weight, January 19, 1891, was twelve pounds and twelve ounces. The following are the measurements of the foetal head taken immediately after the operation: M. 13; O. M. 11½; O. F. 11; Sub. O. B. 10 cm.; Bi. P. 10½ cm.; Bi. T. 8½ cm.; T. B. 9½ cm.; and the F. M. 8½ cm. The great circumference was 36½ cm., and the small 31¼ cm. The baby was placed at the breast at half-past seven o'clock in the evening of the day of operation, and was nursed regularly from that time on.

REMARKS.—I found the tissue connecting the uterus with the vagina to be simply a reflection of the peritoneum. If the woman had been permitted to fall into labor, the head, being driven down by the uterine contractions, would have ruptured the peritoneal connection between the uterus and the vagina, and the child would have escaped into the abdominal cavity. Giving the uterus a quarter of a rotation on its long axis I consider of great im-

portance in the technique of the operation, as the incision through the abdominal wall need not be so long. This manoeuvre enables the Müller modification to be performed through the same length of incision as is the simple Porro, doing away entirely with the objection to the former method of operation. The remarkably short incision—only six inches—which I made, proves this beyond dispute. Whatever the opinion of surgeons regarding the increased danger to life by long abdominal incisions may be, certainly no one can deny the fact that a short opening reduces largely the risk of ventral hernia.

After the eversion of the uterus, sutures were not introduced at the upper part of the incision, but the peritoneal cavity and intestines were protected with dry bichloride towels. This, I believe, to be the better plan, as the foetus can be delivered more rapidly, and the operation itself is more aseptic and orderly—results sufficient in themselves to recommend its use.

The cervix was not constricted until the child was delivered, when my assistant compressed the neck of the uterus between his hands while the rubber ligature was being drawn taut; this plan prevents the child from being asphyxiated.

It is very easy to select a point at which to begin the opening into the womb, as the foetal extremities can be accurately located through the uterine wall. The opening into the uterus was made of sufficient size to admit the index finger; the incision being further enlarged by tearing the muscular fibres. This lessens the danger of cutting the foetus, and, at the same time, greatly increases the rapidity of the operation.

The plan adopted for securing the rubber ligature after it had been drawn taut enables the operator to remove it quickly as soon as the wire constrictor is in position.

Irrigation of the peritoneal cavity was not necessary, as the towels kept everything out of the abdomen. The placenta was situated on the posterior wall of the uterus, near the left oviduct. The quantity of blood lost during the operation was less than the amount which escapes during a natural labor.

In suturing the abdomen four threads of silkworm-gut to an inch were introduced to guard against ventral hernia. I always adopt this precaution in abdominal operations, as I believe there are many cases in which the abdominal wall gives way because too few sutures are used.

I believe the Porro-Müller operation is always preferable when its performance is possible. Notwithstanding the success attained by German surgeons with the Säger method, I believe the Porro-Müller modification to be the safest. After the child is

delivered the operation becomes a hysterectomy, with the stump treated outside of the peritoneal cavity. The mortality of Martin and others, who advise the intra-peritoneal treatment after hysterectomy, is greater than that of those operators who use the extra-peritoneal method. I believe, therefore, that the complete extirpation of the body of the uterus is the safest plan. Again, a woman who is subjected to a Cæsarean operation, because of an obstruction, should never be allowed to run the risk of a subsequent pregnancy. Furthermore, the Porro-Müller operation can be done with rapidity, which is a great advantage, especially in those cases in which the operation is performed after labor has begun and the patient is exhausted. That the Müller modification necessitates a very long abdominal incision is no argument against the method, as I have shown that the uterus, prior to extraction of the child, can be everted through an opening of only six inches in length.

In conclusion, I desire to enter my protest against slow operations, especially those involving the abdominal cavity. Although the peritoneum may be invaded, and operations of the gravest character successfully performed, it is a great mistake to imagine that the cavity of the abdomen can be kept open and its contents insulted by prolonged manipulations, without retarding convalescence and causing many cases to die of shock, which could be saved by rapid work. The speedy recovery of this case of Cæsarean section, I believe, was due, in no small measure, to the rapid execution of the operation. The character of the pulse, and the condition of the stomach subsequent to the operation, indicated that there had been no shock or ether-saturation of the patient. A large number of the abdominal operations, especially intestinal resections and the like, which I have performed on the lower animals, have been simply to gain manipulative dexterity. Without this dexterity no surgeon can hope to be successful in abdominal work, no matter how profound his knowledge of the subject may be.

THE SHURLEY-GIBBES TREATMENT OF PULMONARY TUBERCULOSIS.¹

BY E. FLETCHER INGALS, M.D.
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THE treatment for pulmonary tuberculosis, proposed by Drs. Shurley and Gibbes, consists of hypodermic injections of solutions of the chloride of gold and soda, or of iodine and inhalations of chlorine gas. The injections should be made with an absolutely clean syringe, which should always be washed with pure alcohol before and after using.

The treatment should be commenced with small doses, which may be gradually increased until some constitutional effects are observed, or until the largest dose recommended is reached. It is usually best, excepting in advanced cases, to begin with the iodine (though it is apt to cause considerable smarting), and it should be continued for from ten to fourteen days, and then it may be given alternately with the chloride of gold and soda solution, and later on (after four or five weeks) the latter solution may be used alone if everything is going well. With some patients the chloride of gold and soda answers best. I, however, think more benefit will be derived from the iodine solution.

The dose of iodine is from $\frac{1}{10}$ th to $\frac{1}{4}$ th of a grain, and of the chloride of gold and soda from $\frac{1}{4}$ th to $\frac{1}{2}$ th of a grain. The minimum dose should be used at first and it should be increased by about 20 per cent. each day until the maximum dose is obtained, unless constitutional symptoms occur. When iodine is used it is to be increased as just directed, unless symptoms of iodism appear, or unless there is some loss of appetite, disturbance of the bowels, or complaint of unusual fatigue. If any of these symptoms occur the iodine may be substituted by the chloride of gold and soda for a day or two and then given again in diminished doses, which may subsequently be gradually increased. Sometimes while patients are receiving the chloride of gold and soda in large doses pains are experienced in the bowels, or in some instances there are uncomfortable sensations in the head; occasionally, also, profuse sweating has been noticed. If any of these symptoms develop the dose should be at once diminished, or the remedy substituted by the iodine.

The most favorable place for the injection is in the loose skin in the gluteal region, and care should be taken that it is thrown simply into the cellular tissue beneath the skin, and not into the muscles, which would cause unnecessary pain. I have found that rubbing the part for two or three minutes after the injection will sometimes greatly relieve whatever pain it may cause. In ladies, where it is difficult to get at the point mentioned on account of the clothing, I usually make the injections in the back just below the inferior angle of the scapula or between this and the spinal column.

I would advise daily injections for about two weeks, every second day for the two following weeks, and subsequently once in three, four, five, six or seven days, gradually diminishing the frequency according to the result. When these remedies are acting well the appetite and strength gradually improve, the weight increases, and the cough and expectoration gradually diminish. For the first two weeks Dr. Shurley states the temperature is apt to be increased, but subsequently, in favorable cases,

¹ Read before the Chicago Medical Society, March 2, 1891.

it decreases until the normal point is reached. I have frequently found the temperature subnormal in the forenoon, particularly if the patient had been out in the cold.

The iodine seems to be the better acting, but after using it for a time the chloride of gold and soda appears to maintain (at least for some time) the effects produced by the iodine. Where I have used the chloride of gold and soda alone (as has been recommended in the advanced stages of phthisis) I have not, as a rule, obtained as favorable results as where I have first used the iodine, though occasionally it acts well from the first.

It is very important that the solutions be chemically pure. These I obtain from Dr. J. E. Clark, of the Detroit Medical College, but they may be prepared by any skilful chemist who will consult Dr. Clark's recently published description of his method.

The chlorine inhalations may be given either by means of some of the common or specially devised inhalers, or in a room filled with chlorine gas. The latter is applicable to hospitals where small rooms can be so prepared, or even to small bedrooms, where the arrangement is readily made in the following manner:

First, a steam atomizer is made to throw into the atmosphere of the room a solution of chloride of sodium of the strength of about fifteen grains to the ounce; this is continued until the atmosphere of the room is so permeated by the spray that a person on the opposite side from the atomizer can taste the salt. One or two teaspoonfuls of chlorinated lime are then placed upon a plate or saucer and wet with a mixture of hydrochloric acid, one part, and water, two parts, which causes the rapid generation of chlorine gas. This is then held directly under the spray of the chloride of sodium solution and the gas is carried by it into the atmosphere of the room, where the patient sits for ten or fifteen minutes—as long as he can well tolerate the inhalation.

For use in an office, or other place where a room cannot be appropriated for the inhalation, some of the atomizers already in use for giving deeper inhalations may be employed. Dr. Shurley uses a glass flask such as is ordinarily used for table water, capable of holding two or three quarts, or in lieu of this a large bottle will answer the purpose. This has a hole about an inch in diameter drilled in one side, and has fitted upon the mouth a rubber face-cap, such as is used by dentists for their nitrous oxide inhalers. It is placed upon a suitable stand and then a mixture of chlorine water with a solution of chloride of sodium, ten to fifteen grains to the ounce, is thrown, by any suitable atomizer, through the opening in the side against the opposite wall of the flask, which breaks it into a fine vapor; the patient at the same time inhales, and the air which

is drawn in through the opening in the side of the flask takes up a sufficient quantity of the vapor and chlorine gas. I use the Davidson No. 66 atomizer with from thirty to forty pounds air pressure. Some patients do not bear the chlorine well, and for these I use in the same way a spray of iodine made with four minims of the compound solution of iodine and one drachm of glycerin to the ounce of water. Its effects seem almost if not quite as good as those of the chlorine. Occasionally patients who are using the chlorine inhalations regularly will experience, without apparent cause, an alarming sensation of constriction of the chest some time after the inhalation has been taken.

It is very difficult to obtain chlorine water of uniform strength on account of the various methods employed in its manufacture, and because the gas rapidly escapes when the bottle is uncorked; therefore, a solution which may be strong one day may be comparatively weak the next, and by the following day may have little effect. I have tried various methods to overcome this objection. First, I placed a definite amount (3 or 5 grains) of the chlorinated lime in the flask and added to two ounces of the chloride of sodium solution a half drachm of dilute hydrochloric acid. In this way, as the acidulated spray was thrown against the opposite side of the flask, it ran down upon the chlorinated lime and liberated the chlorine gas; but I found that at first it was liberated too rapidly, if 5 grains of the chlorinated lime was used, while during the latter part of the inhalation little or no gas would be evolved. Hoping to have the gas liberated more uniformly, I had the chlorinated lime made into compressed tablets, but with these I succeeded no better, for from them very little gas was evolved, and even on breaking up the tablet the amount was not much increased, which seemed to indicate that it had disappeared in consequence of the pressure, or from other causes. I then tried the euchlorine gas, which Professor Haines suggested to me as having greater germicidal properties than chlorine and to be less irritating. This we easily prepared by treating pulverized chlorate of potash with chemically pure hydrochloric acid, but in spite of all precautions we obtained with it a large amount of hydrochloric acid fumes, which were extremely irritating. To neutralize these I introduced into this solution prepared chalk, but I found that the carbonic acid liberated in this way carried off with it a large portion of the euchlorine gas, so that the liquid remaining possessed only feeble germicidal properties, and was therefore not suited to the purpose. More recently I have used the U. S. P. chlorine water prepared by Hance Brothers & White, of Philadelphia, of which from $\frac{1}{2}$ to 1 drachm to 2 ounces of the chloride of sodium

solution will make as strong a chlorine gas as can be tolerated by the patient. To avoid the deterioration in strength caused by frequently opening the bottle I adopted a suggestion given me by Dr. Bridge, and had several small glass-stoppered bottles filled from the large one, and used the solution from them. In this way it is not necessary to open the large bottle more than two or three times, and a nearly uniform strength of chlorine gas can be obtained.

I have now been using the Shurley-Gibbes method about eight weeks and have treated by it between forty and fifty patients. In a disease like consumption this length of time is not sufficient to enable us to draw accurate conclusions as to its effect. Dr. Shurley wrote me in the beginning "that the results were certainly encouraging," and I can, from my own experience, heartily corroborate this statement, yet I cannot say exactly how much good has been done. In most of the cases which had reached the third stage of the disease, with large cavities in one lung and the other lung more or less involved, I cannot see that any appreciable good has been done; yet in one of these there has been very marked improvement, as the patient has gained strength and weight, has much less cough and fever, and upon the whole appears very greatly improved. With some patients in the second stage of the disease, with a whole lung involved, we at first appeared to be bestowing benefit, but subsequently concluded that the treatment was useless; while in others of this class very decided improvement has occurred. In the first stage of the disease, where not more than a third of the upper lobe of one lung was involved, the patients as a rule have been so greatly improved that I expect ere long to say of many of them that "they have been cured." Three are now apparently well.

This treatment is based upon careful experimentation, is scientific, thoroughly professional, and seems to be beneficial; therefore, I hope that the profession will give it a careful trial, even to the minutest detail, for it must be remembered that experiments often fail by neglect of some of the details, which to certain observers seem unnecessary. I would not, however, advise the use of this treatment to the exclusion of other remedies which physicians have found of benefit in certain cases, for we cannot experiment upon our patients. I recommend this treatment to patients simply as giving an additional chance. Many failures will undoubtedly be experienced and recorded. Those who use the method in a slipshod way will surely obtain unsatisfactory results, and even though it be employed in the most skilful manner, with the judicious administration of other remedies, there will necessarily be many patients who cannot be cured by it. However,

if properly carried out, I feel confident that much good will come of it and no harm can result.

If even a few patients only are cured, Drs. Shurley and Gibbes will receive the commendation of the profession and will be entitled to the gratitude of the public for their painstaking and laborious efforts to find some way of remedying this dread disease. We congratulate these gentlemen upon having given us what from present indications is one of the most promising methods of treatment yet discovered for pulmonary tuberculosis; but their work is not yet completed, and they and others must work on until instead of from 25 to 30 per cent. from 85 to 90 per cent. of these cases may be prevented or cured.

A CASE OF CEREBRAL SYPHILIS.¹

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ON November 12, 1889, I was called to see Mrs. N., age twenty-one years; married two years; no children; no miscarriages. Persistent cough for three years, with loss of weight. Otherwise well until present illness. Two days ago, while lying down, but not asleep, she suddenly found herself unable to speak to her husband, and in terror began to cry. Getting up immediately, the right arm was found to be useless. There was no convulsive movement, loss of consciousness, nor giddiness at the time of the paralysis, and no premonitory symptoms could be ascertained to have existed. According to the patient's statement considerable improvement had already occurred. On examination râles were heard at the apices of both lungs. Heart normal. Pupils and movement of the eyes and optic papillæ normal. Face drawn to left side; right side moved very little in attempting to show the teeth. Tongue protruded to the right. Motor aphasia was present. Words were readily recalled and used in their proper connection, but indistinctly articulated. Marked weakness throughout the right arm, but with an effort it could be placed above the head. No weakness of leg. Wrist-jerk exaggerated on right side; absent on left. Knee-jerks above average, but equal. No ankle clonus.

Examination showed no loss of sensibility to touch; no pain nor any elevation of temperature, but patient positively stated that a touch on the right hand or cheek caused a different sensation from that experienced on the opposite side.

The lesion was readily localized in the speech, face, and arm centres of the left side of the brain, the three being in close proximity, or else in the fibres proceeding from these centres, not lower than the internal capsule. Only within these limits could a single lesion produce just the symptoms exhibited. One below the internal capsule would

¹ Read before the Denver Medical Association and Arapahoe County Medical Society, January 15, 1891.

almost certainly have involved some of the cranial nerves, as well as the fibres controlling the leg. For reasons that will appear subsequently I think the lesion was cortical.

A focal brain lesion occurring suddenly must be due to hæmorrhage, embolism, or thrombosis. The age of the patient and the absence of any cause of high pressure in the arteries made hæmorrhage very improbable. There was no endocardial disease or anything else to suggest an embolus, so a diagnosis of arterial thrombosis was arrived at by exclusion. But in youthful, vigorous patients thrombosis is practically unknown, except in connection with syphilitic endarteritis. No history of the symptoms of syphilis could be obtained from the patient, nevertheless the diagnosis was adhered to, and iodide of potassium with mercuric chloride prescribed.

The husband, in a subsequent interview, gave a clear account of a venereal sore occurring during an absence from home about a year previous, followed by indurated glands, macular eruption, and palmar psoriasis.

The patient improved steadily and rapidly. In ten days the symptoms had nearly disappeared. In six weeks she could pick up a pin and even sew with the right hand.

Speech showed no impairment, except during excitement, when it was impeded and slightly incoherent. Insomnia had remained since the attack. The iodide was stopped, but the mercury continued. After this, there were intervals of shooting neuralgic pains of the left side of the head and a succession of colds, each of which brought on a slight relapse of the aphasia.

Then, in spite of an earnest warning, the patient disappeared for two months. March 3, 1890, in response to an urgent summons, I found she had stopped taking the mercury and had suffered for some days, with an intense boring headache located just back of the right frontal eminence, at which point there was tenderness on percussion.

Iodide of potassium was again prescribed but not taken, as the druggist supplied the vehicle without it.

At four o'clock the following morning she had a severe general convulsion with complete unconsciousness, frothing at the mouth, and biting of the tongue. It came on during sleep so nothing could be learned as to an aura or as to part in which the spasm began.

When seen at 11 A. M. her mind was clear, but headache was intense. The grip of the right hand was slightly weaker than that of the left, and the tongue deviated a little to the right, remnants probably of the earlier paralytic condition.

The headache and convulsion were attributed to a syphilitic new growth on the inner surface of the cranium, or more probably in the meninges, causing cortical irritation. The iodide was given in half-drachm doses every four hours, with half a drachm of mercurial ointment to be used by inunction each night.

March 5. Slept better; headache persists. Same dose of iodide every two hours.

7th. Headache better; iodide every four hours.

11th. Headache gone; iodism. Iodide stopped; inunctions continued.

25th. No recurrence of epileptic convulsion or other nervous symptoms. Blue pill substituted for inunctions.

During the next three months the patient took mercury and remained well, but was afterward lost to observation, and has not been seen since.

This case furnishes an example of both of the common forms of syphilis of the brain—endarteritis and meningeal gumma. Syphilitic endarteritis always attacks a large number of arteries, and consists of a gummatous growth between the intima and the elastic lamina. By narrowing the lumen it interferes with the nutrition of the part supplied by the vessel. Thrombosis is then liable to complete the obstruction; and softening—that is, molecular death—will ensue, unless blood is quickly restored to the part by collateral circulation. The basilar arteries supplying the corpus striatum and internal capsule are most apt to be diseased in this way, and as they do not anastomose, softening is certain to occur when one of them is obstructed, usually accompanied by apoplectic symptoms and hemiplegia. Cerebral hæmorrhage from syphilitic arteritis is rare until after middle life. If it occurs it causes similar symptoms. Gowers¹ claims that the prognosis is no better in these cases of hemiplegia than in those not due to syphilis, except that recurrence may be prevented. He mentions cases in which favorable prognosis was given in anticipation of the results of anti-syphilitic treatment, only to intensify the disappointment of the patient upon finding his paralysis permanent. An area of softening, whether due to syphilis or not, is never restored. Subsidence of secondary inflammation brings about some improvement, and the corresponding parts on the opposite side of the brain may to some extent act in place of the damaged tract, but the primary effects of destruction remain.

This is apparently opposed to clinical experience, for it is well known that in syphilitics severe hemiplegia may occur, and in a few weeks, or even a few days, entirely disappear. But it is not to be supposed that softening has occurred in these cases. Vascular obstruction is often cortical as well as basilar, and the cortical arteries as they ramify in the pia anastomose freely.

If a large branch is obstructed a considerable area of the cortex may suddenly become anæmic and hemiplegia be correspondingly complete; and yet, as collateral circulation is restored in a short time, the anæmic part may gradually regain its

¹ Diseases of the Nervous System. Am. ed., p. 828. Also, in the Lettsomian Lectures for 1889.

function with little or no remaining softening. I believe the paralytic attack in the case just reported was due to cortical thrombosis. The prompt recovery alone makes this localization probable. The second lesion in this case was doubtless a new growth, probably of the membranes. Either the base or the convexity may be attacked in this way, the former more frequently. The first symptoms are usually severe headache, worse at night, and insomnia. If the disease is at the base, the next symptom will probably indicate the involvement of one of the cranial nerves. The third nerve is most frequently implicated, but the optic nerve, the fourth, sixth, seventh, and eighth are not infrequently damaged.

If the convexity be attacked, instead of cranial nerve palsy, signs of cortical irritation will appear, usually in the form of an epileptic convulsion. Should the process continue, signs of cortical destruction will replace those of irritation, the symptoms varying according to the area involved. Syphilitic disease at the base is very likely to cause choked disc; but this is not apt to occur if the disease is at the convexity, unless pressure is notably increased.*

It will be noticed that the lesions in this case appeared earlier than usual, the onset being about a year after infection, as nearly as could be ascertained.

Syphilis is indicated with sufficient probability to determine the treatment, irrespective of other signs of the disease and the patient's history, in the following cases:

1. Sudden cerebral hemiplegia in patients under forty-five, in whom atheroma, high arterial pressure, and the causes of embolism, notably endocarditis, can be excluded.
2. Progressive multiple cerebral palsies.¹
3. Insomnia and nocturnal headache, followed either by cranial nerve palsy or cortical irritation.
4. Sudden stupor or coma, without other assignable cause. Somnolence, resembling that of alcoholic intoxication, with pain in the head and aimless, automatic actions.²
5. Paretic dementia, in which syphilis cannot be excluded, especially with prodromal nocturnal headache, insomnia, or somnolence and early epilepsy.³

In all of these forms the prognosis is good, compared with the gravity of similar symptoms not due to syphilis, but it should be guarded on account of the possibility of irreparable damage having been already done, and the occasional impossibility of securing the absorption of a gumma.⁴ The treat-

ment should, of course, be vigorous, consisting in the steady administration of mercury for years and enough iodide of potassium to remove all threatening symptoms or exhaust the tolerance of the patient.

SOME REMARKS UPON THE TREATMENT OF CROUPOUS PNEUMONIA.

With Report of a Case.

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THE successful management of croupous pneumonia is a problem that occupies to-day as prominent a position for scientific consideration and solution as it did years ago, notwithstanding our present superior knowledge of its morbid anatomy and the recent advances in general medical skill; and, indeed, medical thought is so varied and confused as to its proper treatment that it may be justly regarded as chaotic. Contrary to what was logically expected the discovery of the dependence of this form of pneumonia upon the inroads of a specific poison, has not materially changed the therapeutics, nor are the mortality lists less lengthy or more favorable than those of former years. In view of this disappointing, and it may even be stated with propriety, humiliating, acknowledgment of our inability to handle a disease with which we are so familiar in all of its manifestations, it is incumbent upon clinical observers to discuss frequently and unceasingly its therapeutic management until some method is at last discovered that, *ceteris paribus*, will insure the patient immunity against a fatal issue. The writer cannot present anything very new in this paper, nor can he express the confidence that the line of treatment he has chosen to consider and elucidate will be successful in a large percentage of the cases that are now regarded as necessarily fatal; but he hopes, by drawing renewed attention to the importance of duly considering the relation between the pathological condition present and the physiological action of the drugs administered, to throw more light upon the general plan of symptomatic treatment that is now adopted by the majority of the profession.

Croupous pneumonia is met with in three classes of subjects, viz.: the sthenic, asthenic, and diseased, and presents in each distinctive indications for medical interference. The ordinary or sthenic type will, however, here be treated of alone.

The first question that arises in the consideration of medical treatment, confronts the physician as a problem which may be difficult to solve. In order to relieve the over-acting heart and full, bounding pulse, that is promoting restlessness, keeping up pain

¹ H. C. Wood: Nervous Diseases and their Diagnosis, p. 75.

² Wood: l. c., p. 410. Heubner: Ziemssen's Cyclopædia, Am. ed., vol. xii. p. 327.

³ Wood: l. c., p. 463.

⁴ C. H. Mills: Brain, July, 1889.

and favoring extension of the inflammation, should he employ some drug that by its sedative action may depress the circulatory apparatus, or is he to practice venesection? The writer fails to see the philosophy of depletion in any instance of so-called plethora, except where it is necessary to relieve the blood pressure for a few minutes, as in apoplexy or pulmonary hæmorrhage due to acute congestion. It is true, blood is very quickly renewed and the withdrawal of fifteen or twenty ounces apparently does no harm, but is it well to add additional labor to the blood-forming organs that are already disturbed in their circulation and nutrition, and are shortly to be more seriously damaged, if the same end can be attained in some other way? Some light may be had upon the proper procedure to adopt, if the causes setting up the peculiar condition of the circulatory system be considered, for why not remove the cause in preference to adopting a mere palliative measure? The violent inflammatory process that has attacked the lung structure produces a shock to the nervous system manifested by anorexia, sometimes nausea and vomiting, restlessness, headache, elevated temperature, irregular flushing of the surface, and spasmodic contraction of the smaller vessels. The latter causes a diminution in the total area of blood-space, which necessarily sends more blood through the heart at each cycle, thus not only abnormally stimulating its action, but increasing the total amount of cardiac work; hence, the heart labors, the bloodvessels appear over-full, and the pulse is full and bounding. The obstruction, *a fronte*, also adds to the cardiac work; more blood than is required is pumped into the sound lung or parts of the lungs not implicated by the inflammation. The interchange of respiratory gases is impaired, and the patient experiences mild dyspnoic symptoms, becoming severe in bad cases. The influence of the vasomotor nervous system over the blood-supply of the lung tissue not being as yet clearly understood in man, it is difficult to say whether the irritation due to the inflammation causes a dilatation, of the lung capillaries, or contraction. Analogous reasoning would point to contraction, but in either case dyspnoea would be present, and the treatment of the general systemic circulation would not be changed. If there was dilatation it would be fair to assume that the inflammatory process would spread much more rapidly than it does, whereas, *au contraire*, it shows a decided tendency to become localized.

Here is a morbid anatomical outline which calls for a drug having a depressing action upon organic life, or to express it more clearly, one which possesses the power of lessening the functional activity of the peripheral nervous system. Several remedies will be thus suggested and the two most important

are aconite and veratrum viride, each one having many ardent and authoritative supporters.

Aconite lessens the contraction of the heart, chiefly through its influence upon the vagus centre (Brunton), increases the action of the skin (Ringer, Fothergill, and others) and kidneys (Bartholow), and depresses the functional activity of the spinal cord and peripheral nerve-endings, effects which serve to recommend it above other circulatory sedatives.

The greatest care is necessary in its administration, and the writer cannot but think that adverse reports from the use of aconite in pneumonia are mainly due to its improper employment. If it be given in too large amount the vagus centre is over-stimulated, the cardiac ganglia paralyzed, and the general circulation becomes so depressed that it is unable to react when the drug is withdrawn. It must not be given with any idea of reducing the temperature: its influence in this respect being due to its action on the circulation and not to any direct antipyretic effect. One-half to two-drop doses every hour (Ringer) until the pulse falls to 90 is the safest method of giving it. As soon as the heart-beats reach this rate it must be at once stopped, or its powerful paralyzant action will produce damaging results. When the drug has acted sufficiently, the blood flows readily from the arterial into the venous system, the lungs are relieved of their mechanical engorgement, the dyspnoea lessens, and the patient feels less restless. If the movements of the heart can be kept at the normal standard nature may be depended upon to do the rest, so far as the circulation is concerned. The importance of not giving too much cannot be too freely emphasized, for very frequently it only requires a few doses to produce the desired effect. If the drug cannot be left in the hands of an intelligent person or nurse to administer, the physician should see the patient within four hours after the first dose, or send a competent assistant at this time. If it should act unduly and the pulse fall below 70, a hypodermic of the $\frac{1}{16}$ th of a grain of the sulphate of strychnine should be given and repeated every two hours, or oftener, until the pulse returns to the proper rate. Aconite given in this way will quell the circulatory disturbance without producing any deleterious results, and entirely obviates the adoption of so questionable a procedure as venesection.

On the fourth or fifth day of croupous pneumonia there is a marked diminution in the albuminoid constituents of the blood, especially the globulin (Sciolla, of Genoa), and in view of this very vital change taking place so early in the disease, it constitutes a grave objection to depletion; and as it has been shown that anæmia tends to promote fatty degeneration of the heart muscle (Goodhart,

Handford), it can be seen that the withdrawal of healthy blood, at the beginning of a disease characterized by high temperature, could only favor this morbid metamorphosis.

Recently there appeared in one of the London journals a report of several cases of pulmonary congestion treated by drawing blood directly from the congested area by means of an aspirator. The largest canula of the apparatus was plunged, under strict antiseptic precautions, into the engorged lung tissue, and the author stated that no difficulty was experienced in removing the requisite amount of blood, and no bad results followed. Such a method is certainly more scientific than general depletion, but its utility is doubtful and the measure too heroic to be generally recommended.

Due attention should be paid to the condition of the alimentary tract, which is sometimes seriously disturbed by reflex influences. Five grains of calomel, rubbed up with an equal quantity of bicarbonate of sodium, should inaugurate the treatment, to secure free evacuation of the bowels, and may be repeated in twenty-four hours if necessary. The administration of such drugs as morphine, quinine, or chloral cannot fail to be reprehensible, unless there be special indications. Morphine upsets digestion by deadening the sensibility of the gastric and intestinal mucous membranes, thereby lessening the flow of the digestive juices, and unless there be severe pain is of questionable utility. Quinine will not reduce the temperature except in massive doses, and when there is nausea is apt to disagree and be rejected. That it exercises any practical influence over the limitation of the pulmonary inflammation is open to question.

Counter-irritation has long been used in treating pneumonia, and there can be no doubt of its usefulness. When small, localized spots of pneumonic infiltration exist "flying blisters" act well; but when large portions of the lung tissue are involved hot flaxseed-meal poultices, containing one-fourth as much mustard, applied until decided redness of the skin is produced, are much more effective. After this the patient's chest should be enveloped in a sleeveless jacket, made of cotton batting, to insure protection from atmospheric changes which necessarily occur in the daily attention to the toilet. While resident physician in the Pennsylvania Hospital the writer, under the direction of his chiefs, applied simple hot flaxseed-meal poultices every two hours during the acute stage of all his pneumonic cases, but the exposure of the patient in removing and putting on each poultice, the discomfort from their weight and bulk, and the extreme doubtfulness of the utility of such a method, are objections which render the simple cotton jacket much more desirable and reasonable. Should the temper-

ature become elevated during the early period, phenacetin may be cautiously given, but never antipyrine nor antifebrin. Five grains every three or four hours will generally be found sufficient; but if the temperature continues to rise above 104° F., some other means should be adopted to combat it. Phenacetin will assist in maintaining the effect upon the circulation produced by the aconite, and will preclude the necessity of repeating the administration of this agent when the circulatory activity proves refractory.

The above measures in the usual run of uncomplicated cases, will answer every purpose for the first stage: aconite to quiet the circulation, calomel to renovate the digestive tract, phenacetin to reduce the temperature and maintain the effect of the aconite, and counter-irritation to assist in checking the inflammation and pain. The diet will be considered later.

As the disease approaches, and during the stage of red hepatization, an entire change in the treatment becomes necessary. The symptoms now manifest are a weak and rapid pulse, mental disturbance, congestion of the liver and jaundice, general nervous stasis, gastro-duodenal catarrh, increase in temperature, profuse sweating, albuminuria, due to congestion of the kidneys, and, in severe cases, threatening symptoms of a failing circulation. Now circulatory depressants are strongly contra-indicated. To stimulate the heart and promote liquefaction of the exudate one drachm of aromatic spirits of ammonia should be given every one or two hours until resolution is fully established, as this preparation of ammonia acts much more satisfactorily, is quickly absorbed, and agrees better with the stomach than the carbonate. The theory that the decomposition of the carbonate of ammonium increases the amount of carbon dioxide in the blood and promotes dyspnea and imperfect oxygenation is not manifested clinically by any unfavorable symptoms, though this form of ammonia is very apt to be rejected by the gastric mucous membrane. When it is retained it answers the same purpose as the aromatic spirits. To promote nutrition, sustain the vital forces, and stimulate the liver, half-ounce doses of whiskey every two or three hours yield the best results. The role played by alcohol is that of an active, diffusible food, which is quickly taken up by the tissues and appropriated for the purposes of reconstruction and physiological change. To allay nausea and gastric irritation the following prescription has been most successful in the hands of the writer: R. Bismuth. subnitrat., gr. xv.; acid. carbolic., gt. j; mucil. acac., ʒss; aq. menth. pip., q. s. ʒij. M. Sig.: Take as required (Bartholow). To combat the high temperature during this stage no antipyretic measure is admissible, save that of hydrotherapy. If

the temperature be 104° F., cold sponging every hour until it falls; if 105° F. or above, the ice-pack. The writer has elsewhere (*N. Y. Med. Jour.*, March 8, 1890) spoken of the effectiveness of this method of reducing fever, and it is especially applicable to pneumonia. The reduction is accomplished in a normal way; that is, by heat radiation and by increased nutrition induced by a more rapid circulation, thereby enabling the system itself to combat the morbid process which is keeping up the temperature. The physiological changes produced in the system by the external application of cold in the form of cold water are: slight chilliness, contraction of cutaneous vessels, short and jerky respiration for a moment or two, increased action of the heart, stronger pulse, sensation of better feeling, and increased muscular activity, followed by a general feeling of surface warmth and increased strength, stronger cardiac contractions, more rapid circulation; regular, deep, and easy respirations, abated sensation of feverishness, improved appetite, and a general bodily calm which frequently induces sleep. A measure acting in this way is certainly more desirable and scientific than one depending for its effects upon the employment of such powerfully depressant agents as antipyrine or antifebrin.

In cases where the formidable symptoms of collapse appear, in addition to the above measures, hypodermic injections of the sulphate of strychnine are most effective; $\frac{1}{16}$ th of a grain every hour or half hour may be given until there is a decided response. The following case, which the writer is enabled to report through the courtesy of Dr. John S. Miller, in whose practice it occurred, shows most conclusively the value of this agent. The line of treatment adopted was suggested by a paper of the writer's on the use of strychnine in such a condition (*THE MEDICAL NEWS*, January 3, 1891), and the result was most gratifying. The condition of the case was so grave as to cause the two physicians in attendance to pronounce death near at hand, and the ambulance surgeon of a prominent hospital refused to move the patient for fear of death occurring on the way to the hospital:

Patient, (adult, male) found wildly delirious, with several persons holding him in bed. Examination very difficult. Temperature 105° F.; pulse flickering and so rapid that it could not be counted; respirations 55 and shallow; cyanosis extreme, and sweating so profuse as to have saturated the patient's garments and bed-clothes. Percussion indicated consolidation of both lungs posteriorly and the greater portion of the left lung anteriorly. The anterior part of the right lung was clear, save a few râles. Three vital indications were apparent: relief to the weak and depressed circulation, control of the delirium, and nutriment to the exhausted tissues and

nerve centres. These were met by the administration of $\frac{1}{4}$ of a gr. of morphia sulphate and $\frac{1}{16}$ th of a gr. of strychnia sulphate every half hour, with half an ounce of whiskey every twenty minutes. At the end of three and a half hours the temperature was 101.5° F., the sweating had ceased, the pulse had become regular and steady, the respirations had diminished in number and were less shallow, the patient was quiet, conscious, and able to converse.

It is interesting to note the mechanism of recovery in this case: morphine in large physiological doses increases the irritability of the spinal cord (Brunton), thus promoting its functional activity and at the same time obtunds the centres of conscious cerebration. Strychnine does not act upon the cerebrum, but the whole of its physiological force is expended upon the spinal cord and end-organs; hence, the combination of the two agents in the pathological condition present, could only be productive of the most favorable results, if recovery was possible. The strychnine restored the function of the spinal cord, reflex centres, and nerve-endings; the morphine checked the delirium and rectified the mental condition, while the alcohol was utilized as fuel and force to assist nature in recovering herself.

Six or eight dry-cups applied to the chest over the affected area are often very useful in relieving the extreme sense of pulmonary discomfort, and inhalations of oxygen during the period of crisis will improve the quality of the blood and relieve venosity.

It is thus seen that the treatment of the second stage, from a physiological and pathological standpoint, may be summed up as follows: Ammonia to stimulate the heart and remove the exudation, alcohol to supply material for force and reconstruction, hydrotherapy to reduce temperature, strychnine to combat circulatory failure, and morphine to control mental disturbance. Subsidiary measures will, of course, be adopted as the indications arise. Alcohol is to be given freely, commencing with it in the form of whiskey; if this disagrees, then give champagne, then koumiss, then whiskey hypodermically. The amount of strychnine given will depend upon the degree of response to the initial doses; it may with safety be run up to gr. $\frac{1}{16}$ th every hour.

The diet is of the utmost importance. Nourishment should be administered every two hours, night and day, from the commencement of the disease. Milk, broths, soft-boiled eggs, raw or stewed oysters, egg-nogs, milk punches, etc., are the most suitable forms of aliment. If the patient becomes unconscious and swallows with difficulty, the milk, alcohol, and medicine may be administered through a nasal-gastric rubber tube without difficulty.

PERIODICAL ATTACKS OF SYMPATHETIC OPHTHALMIA FOR TEN YEARS, DUE TO A BULLET WOUND; REMOVAL OF THE EYE WITH THE BULLET, FOLLOWED BY CESSATION OF THE ATTACKS.¹

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THE following history concerns a miner who figured as a principal in a tragedy in the western part of Maryland ten years ago. The subject of the sketch killed his antagonist and was himself shot in the left eye. The history of the case is as follows:

M. M., age thirty-one, shot in the left eye with a 22-calibre pistol bullet nearly ten years ago. Immediately after the accident he went to an oculist, who advised him to let the eye alone and told him that his vision would in all probability be partially restored, as it was his opinion that the bullet had not penetrated the eye, but had simply glanced and struck it. The vision at this time was limited to light-perception. Since the accident the eye has been the seat of violent attacks of pain lasting for several days, but the patient would frequently be for months without any trouble. Three years ago he was seized with an unusually violent attack in the injured eye, and at the same time sympathetic disease appeared in the other eye, showing itself by sensitiveness to light and profuse lachrymation. The attack lasted for a week, leaving the good eye unimpaired in its functions. Two years later he had another attack of the same nature.

One month ago the patient came to see me during an attack. The vision in the wounded eye was absolutely lost, not even light-perception being present. The eyeball was exquisitely sensitive to the touch and had been so at every previous attack. The pupil was closed and anterior synechiæ were present. A large scar at the upper border of the cornea indicated the site of the wound produced by the bullet. The eye was mushy and had shrunk considerably since the injury, and of course it was impossible to see the fundus. The conjunctiva of the eyeball was very red, and the secretion of tears abundant.

The singular and at the same time most interesting feature of the case was the condition of the right eye. The ocular conjunctiva was very red, and a superficial keratitis, limited to a small part of the cornea, was present. No involvement of the iris. The lens and vitreous were clear and nothing abnormal was to be seen in the fundus. The eye was painful and very sensitive to light. Vision was necessarily much interfered with by reason of the corneal complication. I advised the patient to have the injured eye enucleated. He consented and I

immediately performed the operation. Just within the angle formed by the junction of the eyeball and the optic nerve, on the temporal side of the latter, the bullet was found. It had gone through the eye and its point of exit was marked by a narrow band of cicatricial tissue at the point where it had lain for so many years. The eyeball was cut open and found to be so much disorganized that it was impossible to make out the relative positions of the parts.

It was a matter of regret to me that it was not practicable at the time to make cultures from the inside of the eye, to ascertain whether the pain and the disease going on within were due to the presence of microorganisms. These, if found, must have made their entrance into the ball many years ago, for the hole made by the bullet had closed very soon after the accident, since which time there had been no opening into the eye. Though I did not regard the trouble in the injured eye as one of infectious origin, still if the presence of organisms could have been proven, an interesting, and at the same time valuable, fact would be established, namely, that microorganisms can remain quiescent for a number of years in an eye and at intervals give rise to all the symptoms of an acute inflammation.

It may be well, however, to state in this connection that two years ago, while making experiments on sympathetic ophthalmia, I had occasion to examine a number of eyes which had been enucleated on account of the danger of sympathetic disease, and in one eye only—in which the injury was of two weeks' duration—did I discover organisms, a fact which has led me to think that the agency of microorganisms in the causation of sympathetic ophthalmia can be excluded if the sympathetic disturbance appears as late as from two to three months after the injury.

As soon as the injured eye was removed the other eye recovered without treatment. The disease here could not have been of a parasitic nature, or the deeper structures of the eye would probably have been first involved. That the trouble in the second eye was either caused, or, in part, kept up by the presence of the injured eye, together with the bullet which was near, was evident on account of the disappearance of the sympathetic disturbance when the injured eye and the bullet was removed. Such a case of sympathetic ophthalmia I would look upon as due to the ciliary irritation kept up by the presence of the injured eye, and not to the passage of organisms from one eye to the other. Indeed, the infectious origin of sympathetic ophthalmia, in my opinion, is far from proved.

The road along which sympathetic irritation travels is a most complex one. It is composed of

¹ Read before the Clinical Society of Maryland, February 6, 1891.

the short ciliary nerves, which come from the ciliary ganglion, and of the nerves which enter into the composition of this ganglion, namely, one from the nasal branch of the ophthalmic, another from the third nerve, and still another from the sympathetic. Among these the nerves which have most to do with the sympathetic irritation are the fibres derived from the fifth and from the sympathetic. It is evident, then, that the irritation must pass along an eccentric course before it reaches the second eye. In order to establish the rôle of the ciliary nerves in the transmission of the sympathetic process it should be possible to put a stop to this process by cutting these nerves. The theory would then be proved. I quote the two following cases, which occurred in the practice of M. Abadie:

In the first a wound of the cornea through which the iris protruded had been caused by a piece of broken glass. The hernia of the iris, however, was excised, and the eye recovered, when suddenly there appeared in the other eye all the symptoms of a sympathetic inflammation, photophobia, ciliary and pericorneal injection, and, finally, irido-cyclitis, with posterior synechiæ. At this time the fundus showed nothing pathological, and it was plain that the inflammation was provoked and kept up by a certain degree of ciliary irritation; the symptoms which indicated this more especially were the excessive vascular injection and the pain on pressure in the ciliary region. After closely observing the case for a few days, M. Abadie determined to make a section of the ciliary nerves, as he was convinced that they were concerned in the transmission of the disease. The operation was performed, and immediately afterward the pain disappeared, as if by magic, and though sleep had been almost impossible before, the patient slept well the first night following the operation. The injection of the eyeball soon passed away, and recovery was rapid and perfect.

The second case, which was not less instructive than the one just described, showed the speedy relief afforded by an operation. In this case there was a relapse which necessitated a second operation, this being followed by complete recovery. These two cases apparently show that the sympathetic process can be removed by section of the ciliary nerves.

It would seem, then, that we have two forms of sympathetic ophthalmia, first, a ciliary or reflex form, under which head the cases here reported would come; and second, a variety of the disease the pathology of which is still in doubt. Their points of difference may be summed up as follows: In the ciliary variety of sympathetic ophthalmia the photophobia, lachrymation, and ciliary pains are most intense; and then, too, a fact noted by many surgeons, there is a spot which is particularly

sensitive to pressure, and which occupies the same locality in each eye, namely, some point in the ciliary region. Here the process commences in the iris and ciliary region, while the vitreous and fundus of the eye generally remain healthy and only become involved secondarily. In this variety the disease manifests itself at periods varying from two and three months to fifteen and twenty years after injury of the first eye. In the other variety the sympathetic process appears more promptly, generally in from two to six weeks, and though the subjective symptoms are less intense than in the ciliary form, the former variety goes on more rapidly to destruction of the eye.

In the latter variety the fundus is first involved, and we notice a papillitis, soon followed by opacities in the vitreous, deposits on Descemet's membrane, and, finally, irido-cyclitis. I do not call this latter an infectious form of sympathetic ophthalmia, for the existence of such a variety of the disease rests on too uncertain proof. Both varieties are, in the majority of cases, to be traced to wounds, all of which are more or less of an infectious nature; and though in the ciliary form of sympathetic ophthalmia there is less likelihood that infection plays a rôle than in the other variety, yet I do not think that experiments in this direction would warrant us in designating either variety of the disease as distinctively infectious. It is evident that had the disease in the two cases reported by M. Abadie been of an infectious character simple section of the ciliary nerves would not have given relief.

ON THE VALUE OF FÆCAL VOMITING AS AN INDEX OF ACUTE INTESTINAL OBSTRUCTION.

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IN the treatment of intestinal obstruction the most common cause of failure is the inability of the attending physician to arrive at a positive and correct diagnosis before the time for operative relief has passed. This difficulty of diagnosis has become notorious.

Given a case of local abdominal pain, gradually becoming general, of soreness spreading over the abdomen, of tympanites, of vomiting and obstinate constipation, who can say positively whether it is a case of general or local peritonitis, of ulceration and perforation of the bowel, of abscess without the peritoneum, of bilious colic from gall-stones, of faecal impaction, or of some form of acute obstruction which demands an operation. In many such cases the diagnosis may be impossible during life, or at least until a late stage of the disorder, but occasionally the symptoms may be so positive and unmis-

takable that the practitioner who fails to recognize them must be responsible for a fatal result. It is important then to recognize all of the symptoms met with in a case of obstruction at once; we must also remember that all of the classical symptoms are rarely met with in one case, and that occasionally the great majority, if not all of them, are absent.

Acute intestinal obstruction may cause local or general pain, vomiting, tenesmus, constipation, tumefaction of the abdomen, tympanites, colic, disturbance of respiration and pulse, increased or diminished temperature, and finally paralysis and collapse. The symptoms necessary to make a diagnosis are the pain and soreness, tumefaction and tympanites, tenesmus and constipation, and vomiting. I think the profession should get rid of the impression that pain, tenderness, and tympanites of the abdomen necessarily indicate peritonitis.

I have frequently operated upon ovarian tumors in cases where, from the previous occurrence of sharp agonizing local pain accompanied with tympanites, lasting several days, I had expected adhesions, and have been happily disappointed in not finding the slightest trace of an inflammatory process, either on the smooth wall of the cyst or on the parietal or visceral peritoneum. I have operated for intestinal obstruction in cases, in which the diagnosis of general peritonitis had been made, to find only a circumscribed local inflammation at the seat of obstruction. The occurrence of general pain and tenderness over the abdomen, in cases of strangulated hernia, are symptoms which no one accustomed to deal with these cases, would think for a moment of attributing to peritonitis.

I am at present treating a patient with a syphilitic stricture of the bowel, and am obliged to keep his bowels open with frequent doses of cathartic medicine. When I fail to do so his abdomen becomes tympanitic and very sore. Abdominal pain and tenderness and tumefaction may arise from a multitude of conditions and is pathognomonic of none.

Small circumscribed tumors may arise more or less suddenly from perityphlitis or other localized inflammations, from intussusception and more rarely volvulus, from impaction of feces, from the presence of foreign bodies in the gut, and from the rapid formation of cysts or tumors. Tumors of long standing may not be discovered until attention is directed to the part by the presence of pain. Tympanites may result from peritonitis, septic poisoning, indigestion, hysteria, paralysis, and acute or chronic obstruction. Tumefaction in itself can not be regarded as a symptom of great diagnostic value. Tenesmus may occur as the result of obstruction, but as it is met with in a great variety of irritative conditions of the bowel, it becomes of importance as a symptom only in cases of intussuscep-

tion where it is associated with the rapid formation of a well-defined tumor.

Obstinate constipation, which does not yield to the free and repeated use of cathartics, is too often accepted by many practitioners as a symptom of obstruction.

Nothing could be more delusive. Obstinate and unyielding constipation may be met with in peritonitis, perityphlitis, paralytic conditions, high fevers, in many obscure disorders of digestion, and in acute or chronic opium poisoning. In the last case of perityphlitis on which I operated there was obstinate constipation which had not yielded to drastic cathartics given prior to my arrival. I have seen badly wounded men in the army killed by the injudicious use of purgatives, given to overcome constipation due to high fever and irritation caused by severe wounds. I recall one case in particular of amputation at the shoulder-joint in which constipation lasted several days in spite of repeated enormous doses of purgatives. Finally, at the end of the fifth day, the fever subsided and was succeeded by a fatal diarrhoea which could not be checked.

I think the constipation in these cases is due to paralysis of the intestines produced by the severe shock, irritation, and fever caused by the wound. Recovery from the paralysis is followed by absorption of the purgatives which produces hypercatharsis. I cannot too strongly express my disapprobation of the indiscriminate and repeated use of powerful purgatives in cases in which constipation is associated with tympanites or tenderness of the bowels. Purgatives may occasionally do good, but in these cases are more frequently harmful, and when there is intestinal obstruction they are always contra-indicated.

The peristaltic action excited by the drugs forces that part of the gut above the obstruction down and doubles it over the constriction. If it be a case of intussusception a still larger portion of the bowel is invaginated. In any case the congestion at the seat of stricture is greatly increased and the death of the bowel is hastened.

Vomiting is a common symptom in many diseases and is of diagnostic value in intestinal obstruction only when its cause can be detected, or when it assumes a stercoraceous character. Fæcal or fœtid vomiting is, however, a symptom of the greatest value and the gravest import. In my own experience I have never seen it except in intestinal obstruction. I regard it, indeed, as the only symptom which taken alone is always pathognomonic of this condition, I have become convinced of this from bitter experience. Within the last six months I have lost three patients, after desperate operations, undertaken too late for the relief of obstruction, every one of whom had vomited stercoraceous

matter for days before the operation. One of these patients, who had a strangulated hernia, had been dosed liberally with pills and salines. Another case, a young married woman, had had an attack of peritonitis some years before I saw her. When I was called she had been ill for more than a week and had vomited fecal matter for five days. The operation was performed *in extremis*; her pulse was 110 and her skin was cold and clammy. During the operation her respiration ceased several times, and she was kept alive with difficulty. I found the small intestines bound down and bent by a firm whip-cord band of false membrane, which I could not break, but which I cut between two ligatures. The vomiting ceased after the operation, but she never rallied from her state of extreme nervous exhaustion, and died six hours after the operation. The third patient had suffered from *la grippe*, which was followed by cough and constipation, associated with chills and fever. On Wednesday, March 19, 1890, he had chills and fever, and again on the 20th, when the family physician, a very intelligent practitioner of medicine, was called. The patient's temperature was 103° and he had slight pain in the bowels and very severe headache. On the 21st, he had a chill, headache, and slight pain in the bowels. There was a subsidence in the fever on the 22d. Pills of aloin, strychnia, and belladonna were administered, followed by an enema, but they produced no effect upon the bowels. On the 23d, no change, except nausea and vomiting, which was checked by milk and lime-water. On the 24th, there was a free movement of the bowels after an enema; the nausea was not so intense. On the 25th, there was another fecal movement after an enema; the patient vomited matter which emitted a foul but not fecal odor. On the 27th, vomiting continued and I was called in consultation. When I saw him his pulse was fair but the skin was cold and clammy, and there was paralysis of the capillaries which is so often the forerunner of death. He vomited a brown fluid which had a horrible putrid odor, but could not be called fecal. I operated as soon as possible and found the small intestine twisted on its axis and there was a quantity of foetid matter in the folds produced by the volvulus. When untwisted the bowels were found to be paralyzed, and could not be made to respond to any stimulus. A part of the intestine which seemed to be almost gangrenous, was excised and the gut reunited. At the close of the operation there was no difference in the general condition of the patient, and he died at 6 P.M. of the same day. The family physician recognized the possibilities of the case as soon as the vomiting of foul matter occurred, but as its odor, though putrid, was not fecal, he hesitated until the golden opportunity had passed, and the operation was performed too late.

Foetid odor of the vomited matter has the same significance, under certain circumstances, as that of fecal odor. It means that intestinal obstruction has reached a high degree and that relief or death must soon follow. But some of my colleagues will say that a foetid breath is of common occurrence in gastric troubles in which there is no question of obstruction. This is doubtless true, but suppose that a man with a breath of ordinary sweetness is seized with pain, constipation, and vomiting, that the ejecta at first have only the sour odor of half digested food, or perhaps no odor at all, and that finally after the vomiting has continued for some time it assumes suddenly an extremely foetid character, then it always means intestinal obstruction. Foetid breath often comes from nasal catarrh, necrosis of bone, rotten teeth, or fermenting food in the stomach. In cases of caries, necrosis of bone, and rotten teeth, the odor of the breath might not be communicated to the vomit. In cases of gastric fermentation in which there is continued vomiting, the stomach would soon be emptied of all the foetid material, and the later ejecta would be less foetid than the earlier. In intestinal obstruction the reverse of this occurs. The vomit becomes more and more foetid the longer it continues. While the occurrence of fecal or foetid vomiting positively indicates operative procedures it is unfortunate that in the majority of cases this symptom is not present. The surgeon, therefore, must not wait for this symptom before operating when other symptoms of obstruction are present. Although other symptoms, taken singly, may point to various disorders other than obstruction, their combination enables the surgeon to come at once to a correct conclusion. Abdominal pain, tenderness, and vomiting are of plain import, if associated with an irreducible hernia. Tenesmus, abdominal pain, and the rapid formation of a tumor in the rectum or abdomen is also diagnostic of intussusception.

Fæcal or foetid vomiting indicates almost without exception obstruction of the bowels and warns the surgeon of the necessity of an immediate operation for the relief of the patient.

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"PRISM-DIOPTRE" vs. "CENTRAD" IN THE REFORMED NUMERATION OF PRISMS.

BY B. ALEXANDER RANDALL, A.M., M.D.
OF PHILADELPHIA.

In the *Ophthalmic Review* for January, Dr. Swan M. Burnett contributes a recommendation of the "prism-dioptre" for the numbering of prisms in ophthalmology, and denies to the other units proposed any such accuracy, convenience, and valuable relations as he claims for Mr. Prentice's proposed unit. The endorsement by a vote of the American

Ophthalmological Society last year of the "centrad" proposed by Dr. Dennett is characterized as hasty and mistaken; so it seems not improper that, as the mover of that vote, I should make an answer to his criticism.

We need for the designation of prisms a system that shall be accurate, simple, and practicable; and it is exceedingly desirable that it shall be intimately related to our reformed numeration of lenses, to the effect of decentering lenses, and to the "metre-angle" of convergence which corresponds with the "dioptré" of accommodation. Dr. Burnett advocates, as furnishing the desired unit, the "prism-dioptré"—a prism deviating a ray of light falling at right angles upon one of its faces through the space of 1 cm., measured upon the tangent-plane 1 metre distant—and says, in the matter of prisms, "‘approximations’ cannot be long tolerated."

A prism produces an angular deviation of the rays of light passing through it, and the size of this angle of deviation measures the strength or the effect of the prism. This may be expressed in terms of angle, of arc, of tangent, or of sine; but only the first two, which are interchangeable, are uniform. The prism-dioptré, which is a tangent measurement, declines in value with each increase of the angle, until near the right angle it grows infinitesimal. Even at the starting point it is but an "approximation" to what we wish to express; and it condemns itself, since 10 prism-dioptries are less than 10×1 P. D., 20 P. D. = 19.3×1 P. D., 40 P. D. = 35×1 P. D. The unit endorsed by the American Ophthalmological Society is uniform, and represents 0.57295° of angle or arc at every part of the circle.

The important "metre-angle" varies with each individual variation in the distance between the centres of rotation of the eyes, and has in the past needed more calculation than was convenient in clinical work. Mr. Prentice deserves our hearty thanks for pointing out its relation to his prism-dioptré. He shows that approximately, within narrow limits, the value of the metre-angle is expressed by half the distance between the pupils measured in centimetres. Yet he admits that it is far astray for high values, since for an inter-pupillary width of 64 mm. (the average of the books, though wide for American faces) 20 m.-a. would correspond with 83.4 P. D., instead of 64; and, conversely, 64 P. D. would express less than 17 m.-a., not 20. Even for eyes as close as 50 mm. 10 m.-a. would be erroneously expressed in prism-dioptries by as much as 3 per cent. The metre-angle is measured accurately under all circumstances by the "centrad" system approved by the American Ophthalmological Society; and even in this off-hand statement, obtained from half the inter-pupillary

distance in centimetres, the approximation is very close. For 64 mm. and 20 m.-a. the "centrad"-reading on the arc is 69.46, and this is the real value: neither the corresponding 83.4 P. D. nor the 64 cm., which is twenty times half the inter-pupillary distance, directly express it; the former is its tangent, the latter its sine—from either it can be derived only by calculation. Yet, assuming for convenience that we may state metre-angles directly in terms of inter-pupillary distance, the above figures show how far better an approximation the centrad is than the prism-dioptré. Dr. Burnett implies that the prism-dioptré value is accurate, while he denies any relation of the centrad to the metre-angle. In both points he is manifestly in error.

In the decentering of lenses a prismatic effect is obtained, which is much used (unconsciously or intentionally) in ophthalmic practice, and deserves wider and closer study. This, Mr. Prentice claims, is accurately expressed in prism-dioptries, if the centimetres of decentering be multiplied into the strength of the lens in dioptries. I question if this be correct, although I fail to detect the flaw in his argument: the relation seems a matter of sine not of tangent, in which case the centrad system would again be closer the approximation. Certainly a 20 D. lens decentered 1 cm. (this probably exceeds the limits in practice) gives 20 centrads of deviation, as accurately as I can measure with improvised apparatus. The difference is small—20 P. D. = 19.75 Cr.—so at the worst the error in the use of the centrad in this relation does not compare with the gain at the other points.

Yet the centrad is impracticable, Dr. Burnett claims, because "neither Dr. Dennett nor any other advocate of the centrad has offered or devised any really practical method of measuring prisms according to the radian system." Dr. Burnett has befogged himself by importing into the centrad system the "minimum deviation," which has no place there. Like the prism-dioptré, the centrad is a prism which, at 1 m. distance, deflects the ray of light falling at right angles upon one of its faces through the space of 1 cm., the only difference being that the centrad is measured on the arc and not on the tangent. It is not "curious," therefore, that at first their values agree; they diverge because $20 \text{ Cr.} = 20 \times 1 \text{ P. D.}$, approximately, while $20 \text{ P. D.} = 19.3 \times 1 \text{ P. D.}$. The centrad may be measured on the tangent-plane at any distance with as much ease and accuracy as the prism-dioptré; only we must use the tangent-projection of centimetres of arc instead of even centimetres. But this calculation, though simple, may be avoided by measuring on the arc of the perimeter, with which nearly every oculist is provided. If its radius of

curvature be 30 cm., as in my instrument, every 3 cm. of the arc is 1 "centiradian," "centirad," or hundredth part of a "radian," and corresponds to 1 centrad. Fix the scale of Mr. Prentice's prismometer at, say, 25 cm., and curve it to this radius, and it will measure centrad with all the accuracy with which it now expresses the specious prism-dioptres: only 100 Cr. will not have a nominal value of 157, as is the case with the prism-dioptre. The oculist needs but to add a prism-holder and a vernier to his perimeter, and he has no need for the additional instrument.

To the optician there will be no recognizable difference between the centrad and the prism-dioptre. He will buy from the wholesale manufacturer, or will grind for himself, prisms of 1° , 2° , 3° , 5° refracting angle as before, just as many still handle lenses ground to inches of radius. When they differ distinctly from the strength required, he will lay them aside to fill the orders of the hair-splitter who calls for hundredths of a centrad, or will polish them down to true strength. Dr. Burnett's assumption that the centrad is indivisible and that only exact whole numbers can be employed is gratuitous, to say the least.

Yet the advantages of the "radian" system do not end (as with prism-dioptres) in the designation of prisms. This is but a part of its value in ophthalmology as in most mathematical work. The radian can everywhere replace the degree in designating arcs or angles. The deviation of a squinting eye is best measured on the perimeter, and better in "centirads" than in degrees. The field of fixation can be given conveniently in the same terms and the extreme limits of the visual field also. All values relating to the directions of the optic axis and vision, central or peripheral, monocular or binocular, can be well expressed in this system, which is far from limited to questions of "velocity" only, as Dr. Burnett states in his special pleading. More: the position of the cylinder-axis may be expressed in the same notation, although $157 + \text{Cr.}$ may be less convenient than 90° to express the vertical. Yet as many ophthalmologists reject the trigonometric notation now generally accepted, and insist on taking the zero point anywhere except at the "three o'clock" used by all mathematicians, we might secure uniformity by abandoning all degree terms and starting fresh in centirads.

Therefore, in urging the American Ophthalmological Society to adopt the centrad as the unit, I did not lead them into a hasty mistake; but, with Mr. Prentice's prismometer on the table before us, and with recognition of his valuable suggestion as to the metre-angle, a better standard than his was endorsed. The centrad has practically every advantage claimed for the prism-dioptre, without its

inaccuracies; it can hardly be called, like its rival, an arbitrary choice; and it is in accord, not only with practical and scientific ophthalmology, but also with the most advanced mathematical science.

CAMPHORIC ACID IN NIGHT-SWEATS.

BY H. A. HARE, M.D.,

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WITHIN the last eighteen months Combemale has published the results which he has obtained from the employment of camphoric acid and the tellurate of sodium in the treatment of the night-sweats of phthisis, or those dependent upon some other severe systemic disorder. I have been so frequently misled by the enthusiastic reports of clinical observers both in Germany and France as to the value of some new remedy which they had tried, that I must confess to have taken up camphoric acid with a considerable degree of prejudice against it. I have studied its action, however, very carefully in the wards of St. Agnes's Hospital during the last six weeks, and I am now prepared to most thoroughly endorse everything which Combemale has said about this drug. I believe it to be of greater utility than any of the remedies which have heretofore been generally employed, such as atropine, aromatic sulphuric acid, and sponging with alum or sulphuric acid water, or similar preparations. Altogether I have given it to about ten cases, and in every one of them it has acted, even if given in moderate dose, most satisfactorily. The following history of two cases are about as good examples of these clinical facts as I can offer:

A man, aged thirty-five, was brought into the hospital in the early part of January suffering from advanced phthisis with a large cavity at the left apex and with numerous smaller cavities in both lungs. There was a good deal of expectoration of purulent matter and a loose, racking cough, rapidly progressing emaciation, with that peculiar flattening of the wrist which we so often see, so that the fore-arms looked like laths, and with such persistent and aggravated night-sweats that the occurrence of each sweat could be seen to increase very markedly his debility and asthenia. So severe was the effect of these sweats that I could always tell on entering the ward whether he had one the night before, and on one or two occasions I was shocked to notice what terrible changes had taken place during the past twenty-four hours. All the anti-sudorific remedies which I could think of were employed, without any avail or with only a slight decrease in the quantity of the sweat. Finally, in despair, I turned to camphoric acid and ordered that twenty grains of the drug should be administered stirred up in a little milk or placed upon the tongue and washed down with water one hour before the time at which the sweat generally came on, namely, at one o'clock in the morning. To

make a long story short, I can only add that during the remaining four weeks the drug absolutely controlled all sweating, although it was only given once in every twenty-four or forty-eight hours—thereby greatly increasing the patient's comfort and undoubtedly prolonging his life. It is also worthy of remark that this drug did not seem to decrease the other secretions, such as the saliva, or to cause the uncomfortable drying of the throat and feverishness of the skin so characteristic of full doses of belladonna.

The second case was that of a woman, aged twenty-five, suffering from pulmonary phthisis of a more chronic form than that of the case which I just detailed. In this case also the sweats were very annoying, producing insomnia and loss of strength, although they did not seem to be productive of as much debility as in the case of the man. In this instance, also, camphoric acid in the dose of 20 grains produced a most pleasing effect, completely controlling the sweating. I may also add that I have employed the drug in cases of nervous exhaustion and general debility accompanied with excessive sweating with considerable success.

When we consider that the dose of 20 grains of camphoric acid is only a third of what may be given in cases where this dose fails, namely, 60 grains, it becomes evident that the drug requires a more general trial by the profession, and that it will probably take a prominent place in the list of our materia medica. It is absolutely devoid of taste, insoluble in water, and comes in small micaceous crystals, which are soluble in alcohol. It does not produce the gastric irritation and burning produced by camphor, and in none of the cases in which I have employed it has it ever occasioned any distress or untoward symptoms.

As yet I have not had an opportunity to test the therapeutic activity of the tellurate of sodium, and I can say nothing, therefore, in regard to its value. Combemale states that while it is useful in night-sweats it is not equal to camphoric acid in power, and I am so well satisfied with the latter drug that I shall only try the tellurate of sodium when I find a case in which camphoric acid fails.

ORIGINAL LECTURES.

PREPARATION FOR ABDOMINAL SECTION— HERNIA AS A SEQUEL.

A Clinical Lecture.

By E. E. MONTGOMERY, M.D.,

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GENTLEMEN: I propose to spend a portion of the hour in the discussion of abdominal surgery and the preparation to be made for the operation. This is a comparatively new branch of surgery, and dealing as it does with the largest serous and absorbing mem-

brane of the body it requires the greatest care and precision in the preparation for operation. It is a field in which we may justly feel proud of the accomplishments of American surgeons. In reviewing the literature of the subject we find it well established that the first operations for the relief of ovarian growths were done by that courageous backwoodsman, Ephraim McDowell, of Kentucky, in the year 1809. He performed nine operations. Although the operation was subsequently done in isolated cases by Nathan Smith, of this country, by Lizars and Clay, of England, it was not until Atlee, of this city; Dunlap, of Springfield, Ohio; Kimball, of Mass.; and Peaslee, of New York, entered upon their brilliant work that the profession recognized the importance of the procedure. When we consider what these men went through in braving public and professional opinion we cannot but admire their courage and feel that they deserve to be immortalized.

In the extension of this department of surgery we find the names of Battey, urging the removal of ovaries for diseased conditions and for the purpose of bringing about the menopause artificially; Marion Sims, urging the opening of the abdomen in all injuries in which the abdominal viscera are likely to be affected; seconded by the work of such men as Bull, Davis, Barrow, and others. In lauding the work of American surgeons we have no wish to discredit the work of Spencer Wells, Tait, Hegar, Schroeder, Keith and many others, who deserve to be mentioned for their original work. Of the intestinal work alone, Prof. Goodman has said that had our present knowledge of the mode of treating intestinal injuries been known and practised at the time of our civil war, many hundreds of valuable lives might have been saved. At present there is no portion of the abdominal cavity or its viscera that has not been the subject of operation.

In preparation for the operation we have first to consider the patient. Of course, it is understood that the patient has been carefully examined, that the conditions of the various organs of the body are known so far as an examination of the secretions and excretions can enlighten us; and the surgeon is satisfied that the operation is one which is for the best interests of the patient. It is exceedingly important that the secretions of the patient should be in as healthy a condition as possible in order to favor the elimination of the poisonous products that may develop during convalescence; hence, we exercise precaution with regard to the diet of the patient, that the food shall be nourishing, and yet of such a character as shall furnish the least amount of waste material; that the alimentary canal shall be thoroughly emptied by purgatives, preferably saline, which cause a free watery discharge. The skin of the patient, not only the parts about the site of the operation, but of the whole body, should be carefully bathed and cleansed with a view of increasing its action. The skin of the abdomen, the external genitals, and the pit of the umbilicus should be carefully bathed and repeatedly cleansed. This should be done with soap and hot water, using a nail or flesh brush freely, and in those cases in which there is much sebaceous material wash the skin with ether. For a few hours prior to the operation the abdomen should be covered with a cloth wet in a solution of acid sublimate (1 to 1000). In the majority of

cases it is advisable to shave the pubes and the lower abdomen. This should be done, preferably, before the last cleansing, as there is then less danger of having loose hair about the wound during the operation. This precaution is one that is not infrequently neglected. I have assisted gentlemen in operations, when to my astonishment I would find them all ready to make the incision without having given the abdomen any preparation, and have seen it covered with sebaceous material, exfoliated epithelium, and oftentimes with the remains of plasters and applications that had been made to the surface.

We must consider the room in which the operation is to be done, and in which the patient is to remain. It should be performed in a well-lighted, well-ventilated room, one which has been thoroughly cleansed, and is free from carpets and hangings. In it the preparations for the operation should have been made, so that when the patient is brought in under the influence of the anæsthetic, everything is at hand that may be needed during the progress of a complicated operation, as it is very unfortunate to have an operation interrupted to procure instruments or material, which may have been imperfectly prepared for use. The room in which the patient remains subsequent to the operation should also be well heated, ventilated, and lighted, and should be one in which the patient can be kept quiet and undisturbed. No stationary washstand should be present. It is not unusual to find operators exercising every care and precaution in the ways we have already mentioned, and yet failing in others which are equally important. I recently assisted a gentleman in performing an operation in which he had cleansed the furniture of the room with carbolic acid, had the atmosphere so impregnated with it that it was difficult to breathe, yet when it came to preparation for the operation he was poorly provided with antiseptic sponges, had his suturing material placed upon a syringe box which had not been disinfected, and used silk fresh from the store without sterilizing to ligate the pedicle. I do not mention this instance with a view of discrediting the work of another, but simply to impress upon you the importance of exercising precaution in the minutiae, and leaving nothing undone by which the interests of the patient may be promoted.

One of the most important subjects for consideration is that of sponges. These should be of suitable size for ordinary sponging, and where large incisions are to be made there should be in addition a number of large flat ones. These sponges as procured from the shops are usually filled with sand, dirt, and particles of lime, and require careful preparation. They should be first carefully pounded to break up the lime and particles of shell. This should be done by placing the sponge in a towel and beating it. They should then be immersed in a solution of dilute muriatic acid, one ounce to the quart of water, for several hours, after which they should be washed in water until the acid is removed and then cleansed by washing in green soap (*sapo viridis*), and then washed in water until the soap is entirely removed. After this place in a five-per-cent. solution of carbolic acid and keep until used. Sponges may be used repeatedly if properly cleansed. Recleansing may be done by washing in a solution of green soap or placing the sponges in a solution of hyposulphite of soda, one

pound to the gallon of water, to which is added half a pound of oxalic acid. This produces a double decomposition by which sulphur and sulphurous acid are set free. By this change the fibrine and animal material is burned out, and the sponge is in addition bleached so that it presents a much better appearance than when treated in any other way. It will require repeated washing of the sponge to get rid of the sulphur deposited in it, but when it is removed, we are certain that the sponges are clean. They may then be placed in the carbolized solution and kept for use.

During the past year I have used catgut very largely for ligatures and sutures. The occurrence of abscesses in a few cases, however, has led me to feel that it was not a material upon which we could thoroughly rely. The difficulty, particularly in the thicker catgut, is that we are unable to know how carefully it has originally been cleansed and prepared. The manner in which I have prepared it, has been to place the catgut in ether, allowing it to remain for from twenty-four to forty-eight hours, in order to dissolve out fatty substances that may be present. Then it is placed in a five-per-cent. solution of carbolic acid in which one grain of bichromate of potash to the ounce has been dissolved, in which it remains for from twenty-four to forty-eight hours longer, according to the size of the catgut, after which it is placed in absolute alcohol and kept for use. Lately, I have returned to the use of twisted Chinese silk, having this either boiled for an hour or placed for a number of hours in a solution of acid sublimate (1 to 1000), after which it is placed in absolute alcohol to be kept for use.

Now, it is very important to watch carefully your assistant in the removal of the ligatures from the receptacle in which they have been placed. He should be instructed to carefully cleanse and disinfect his hands, to take the ligature out and place it in a vessel containing hot water, being careful not to permit any portion of it to come in contact with table, clothing, or extraneous material by which it may be infected with pathogenic germs. The sutures should be threaded into the needle from the hot water. Precautions should be observed as the sutures are introduced, that the surface with which they come in contact should be one that has been thoroughly sterilized. For this purpose we thoroughly surround the line of incision with towels that have been wrung out of an antiseptic solution, preferably the acid sublimate; after these have been soiled they should be replaced with clean ones before the sutures are introduced.

Now, in performing the operation, the operator stands on one side of the patient. In my operations you will notice that I prefer to stand on the left side. The principal assistant on the opposite side should be a person who is ready and willing to follow the directions of the operator, to anticipate his wishes, and yet not to be officious and attempt to do that which is the work of his superior. He should be a person who is cool and calm in an emergency. The second assistant administers the anæsthetic; he should be accustomed to its use, and be depended upon to keep the patient under its influence with as little expenditure of the agent as possible. The other assistant, who may be, ordinarily, a trained nurse, takes care of the sponges. She should have two basins for this purpose; into one the spoiled sponges are thrown,

washed out, and placed in the other, ready to be handed to the assistant. It is well to have an additional assistant, not to handle the instruments, but to be prepared for emergencies, to have ready Paquelin's thermo-cautery or other preparations that may be needed. The instruments are upon a table to the right of the operator where he can reach them without assistance. The patient, thoroughly anesthetized, is placed upon a prepared table; the abdomen is exposed, surrounded and covered, except where the incision is to be made, by antiseptic towels. As a preparation for the operation, the instruments have been thoroughly cleansed, placed in pans, and covered with hot water.

The first step in the operation is the incision through the abdominal parietes; this is made as nearly as possible in the median line in order to reach the linea alba. It should be made with a scalpel through the skin and superficial fascia down to the aponeurosis, by the first, or, at most, the second sweep of the knife. The extent of this has been determined by previous examination of the thickness of the abdomen. The aponeurosis is opened, and the further incision made by probe-pointed angular scissors, by which the tissues can be cut quickly and safely through to the peritoneum. The peritoneum is raised up by forceps in order to prevent injury to the intestines or to any growth within its cavity. Then, after opening, with a finger introduced as a director, the incision is extended the length of that through the walls. I will not take time now to discuss the methods of operating after the abdomen has been opened, as I prefer to do this when I have before you a patient suffering from a condition requiring abdominal section.

I now bring before you a patient who has undergone an operation some eighteen months since. Her history previous to the operation is rather vague, as she is unable to give the reason for its performance. She, however, now comes to us she says suffering greater distress than before. The operation was performed for the removal of her uterine appendages. She did not menstruate for seven months after the operation, and during this time was quite comfortable. She now menstruates regularly, and suffers a great deal of pain and distress. Prior to and during the flow she complains of burning distress and pain in the inguinal region as well as over the pubes. In looking at the abdomen you will see the cicatrix of an incision some five inches in length. This is an unusually long incision to make for the simple removal of the appendages. One inch from the lower part you will see a slight protrusion, which is increased in straining or in coughing. As the patient now coughs you will see that this protrusion becomes considerably larger; and when I press upon this I can distinctly feel something disappearing before my finger as it is passed into the abdomen. I find an opening through the muscular walls into which the point of the finger can be introduced. This condition is one that is known as ventral hernia, and is not infrequent after abdominal incision where precautions have not been taken in the closure of the wound to carefully approximate the edges of the incised aponeurosis. In this patient the aponeurosis above and below this are firmly united. I find that she has suffered during convalescence from an abscess in the wound, probably a stitch abscess, which continued

open for several months. To this is due, probably, the weakened condition of this portion of the ventrum.

This subject of closing abdominal wounds is so important that I feel that it is to your interest that I should speak particularly of the method of introducing the sutures. The mistake is commonly made of introducing the sutures at some distance, say one-half an inch, from the edge of the peritoneum on either side. If we grasp the incised surface between the fingers the sutures may be introduced without bringing up or passing through the muscular portion of the wall at all, simply involving the peritoneum, the superficial fascia and skin, and such an approximation must necessarily result in a weak ventrum. Then, too, where a large portion of the peritoneum is included in the suture and a large portion of the skin, the peritoneum may be everted, the skin inverted, and but very little tissue intervenes in opposition between the respective edges. The proper plan of procedure is to so introduce the sutures that the edges of the peritoneum are brought in apposition, the aponeurosis and muscular wall thrown well together, and the edges of the skin simply approximated. In this way we are certain to have a firm cicatrix, with but very little danger of hernia.

This patient entered the hospital with the expectation of undergoing an operation for the relief of this hernia, but upon careful inquiry into her history, I fear it would be necessary to perform an operation with a view of relieving the probable adhesions that have occurred in the abdominal cavity. If it had been simply the relief of the hernia, I should have endeavored to have made an incision to one side of the protrusion, dissected or pushed off the peritoneum without opening it, then pushed it back through the opening, and freshened the edges of the aponeurosis, and have brought these together with sutures. But finding that this would not be sufficient to relieve the internal distress, I have concluded to defer operation for the present. This is particularly on account of the condition of the hospital, which, as you know, is undergoing alteration, and does not afford us an opportunity to give this patient a room suitably prepared for a critical operation.

It is very important in performing abdominal operations to use care that adhesions may not result which may very much increase the distress from which a patient may suffer. In all cases in which there have been adhesions, or where the peritoneum has been denuded for an extensive surface, or in which there have been pus sacs removed, drainage is absolutely demanded. Where the adhesions have been extensive, and there is danger of their re-formation, the cavity should be treated wet rather than dry. The introduction through the drainage-tube at frequent intervals of a solution of boro-glyceride prevents the decomposition of the fluid contained in the perineal cavity, permits the intestines to roll over each other with layers of fluid intervening between them, and favors the granulation of the denuded peritoneum, so that cases thus treated may recover without the development of any adhesions.

Commencements.—The commencement exercises of the Jefferson Medical College will be held April 15th, and of the University of Pennsylvania May 1st.

PREPARATION FOR LAPAROTOMY.

*Extracts from a Clinical Lecture,
delivered at the Cincinnati Hospital.*

BY THADDEUS A. REAMY, M.D., LL.D.,
PROFESSOR OF CLINICAL GYNECOLOGY IN THE MEDICAL COLLEGE OF
OHIO; GYNECOLOGIST TO THE CINCINNATI AND GOOD
SAMARITAN HOSPITALS OF CINCINNATI.

GENTLEMEN: Two weeks since I removed the tubes and ovaries from this patient in your presence. Seven days after the operation she was again brought before you with all sutures removed from the abdominal walls and the wound united by first intention.

The next patient I bring before you is the woman from whom I removed a thirty-five-pound multilocular ovarian cyst. She has no fever or pain, and the abdominal wound is closed except where the drainage-tube was inserted, at which point there is slight suppuration. The sutures have all been removed and the woman is out of danger.

You have seen during the past two years the abdominal cavity repeatedly opened in this amphitheatre on my table, which stands in the same place occupied by the operating-table of my friends and colleagues, the general surgeons, with all classes of surgical cases. Moreover my clinics are attended by a large class, made up of students from the different colleges of the city, many of whom are probably just from the dissecting-room, and yet my patients suffer no infection.

You are probably anxious to know what special antiseptic methods are adopted to secure these results. The answer to this inquiry is *cleanliness*. The patient, operator, assistants, nurses, sponges, instruments, water, dressings, and everything used in connection with the operation must be perfectly clean.

Let me call attention to points which I regard as important in the preparation for an operation of the character under consideration.

First, the diagnosis having been made and the operation determined upon, the patient should remain in the hospital from five to ten days before the operation is performed. This is important in order that she may become acquainted with her nurse and her physician, and acquire confidence in them; also that she may become accustomed to her surroundings and that her bowels may be properly and thoroughly evacuated, and that in other ways she may be prepared for the operation.

At the time of her entrance to the hospital she should receive a thorough bath, including shampooing of the head, and thorough scrubbing of the external genitalia, and all parts of the body covered by hair. She should have each day before the operation a sponge bath, and her vagina should be syringed thoroughly with warm soap-suds, followed by a ten-per-cent. solution of carbolic acid, or a bichloride of mercury solution, 1 : 1000.

The day before the operation her bowels should be evacuated by sulphate of magnesia. On the morning of the operation, but several hours before it, the lower bowel should be washed out by an enema of warm salt water. Just before the operation the abdomen should be thoroughly cleansed and rubbed with a 1 : 1000 bichloride solution, or a five-per-cent. solution of carbolic acid.

When the patient is placed upon the table the lower

extremities should be well wrapped in blankets, but the stockings should not be removed. Her chest and arms must be well protected, and only the field of operation exposed. Some surgeons place a piece of macintosh with a slit in it along the proposed line of incision, but I think this is objectionable. Warm towels protect the parts well above and below the line of incision.

The operator's hands should be washed thoroughly with a nail-brush and soap in warm water, the water being changed repeatedly until there is no possibility of uncleanness. The operator's assistant, and the nurse who is to handle the sponges, must observe the same methods of cleansing.

The water used in these ablutions, and that used for cleansing the sponges, instruments, and for irrigating the peritoneal cavity should either be filtered and boiled or should be distilled. The receptacles for the sponges and instruments must be thoroughly clean.

I have recently seen an operator use absorbent cotton instead of sponges, which is only mentioned to be condemned. Soft clean sponges of the Smyrna variety should be used. Ordinarily those cup-shaped are most suitable. No sponge that has been cut or torn should be employed. For protection of the omentum and the intestines from injury by the needle in closing the abdominal wall, as well as for receiving the blood caused by the penetration of the wall by the closing needle, the flat silky sponge, called the elephantine sponge because of its resemblance to an elephant's ear, is much to be preferred. Of course, I assume that your new sponges have been thoroughly cleansed and are aseptic.

I am in the habit of using the same set of sponges in six or eight laparotomies.

Immediately after an operation they must be thoroughly washed in warm water, then placed in a strong alkaline solution, soda being as good as any, which must be changed until all albuminous matter has been removed; several days are required for this process. They are now carefully washed in plain warm water, and must then be kept for a day or two in a five-per-cent. solution of carbolic acid. When taken from this solution they are to be placed in a clean linen bag and hung in a room where they remain until the next operation. Before commencing an operation the sponges are washed out in warm water and are ready for use. The odor of carbolic acid remains quite perceptible though they may remain in the dry bag a month.

Good silk thread is hard to obtain. The so-called Chinese silk is not very reliable and braided silk is objectionable. I have of late used exclusively silk obtained either in Birmingham or London, which gives perfect satisfaction. It is hard, twisted and contains no cotton. It is important that there should be no cotton in the thread, for a pure silk ligature will, in the course of six to twelve months, be absorbed, being an animal product; while if it contains cotton it may not be absorbed, and may give trouble.

The pedicle ligature should be of as small size as consistent with proper strength. The silk to be used, both for ligating the pedicle and for closing the abdominal wound, is boiled in plain water for half an hour and then dried, just before an operation, by artificial heat.

I have already stated that no chemicals of any character are to be placed in the water employed for

cleansing the peritoneal cavity. In simple tubal and ovarian cases no water is poured into the abdominal cavity.

After thoroughly cleansing and drying, oil the abdominal wound; long adhesive strips are applied, followed by pads of absorbent cotton and mosquito netting. Neither moist dressings nor antiseptics are used. The wound is not examined until the fourth day.

In closing this lecture I wish to reiterate that the main object in abdominal surgery is *cleanliness*.

MEDICAL PROGRESS.

Treatment of Psoriasis.—FABRY has employed hydroxylamine in the treatment of psoriasis with good results. The prescription is as follows:

R.—Hydroxylamine muriate . . . 3-5 grains.
Spirits of wine . . . 1½ ounces.
Carbonate of calcium, a sufficient quantity to neutralize.

Or,

R.—Hydroxylamine muriate . . . 15 grains.
Pure water . . . 1½ ounces.
Calcium carbonate, a sufficient quantity to neutralize.

Guttman is said to cure psoriasis in seven days by the employment of a ten-per-cent. ointment of hydracetin. —*Wiener medicinische Presse*.

Treatment of Acne.—ISAAC recommends in the treatment of acne the following prescription:

R.—Powdered chalk . . . 1 drachm.
Beta naphthol } of each . . . 2½ drachms.
Camphor }
Vaseline }
Green soap . . . 4 "
Precipitated sulphur . . . 1½ "

Equally good results may be reached by employing a ten- to twenty-per-cent. ointment of resorcin. —*Wiener medicinische Presse*.

Treatment of Eczema.—The *Wiener medicinische Presse* states that CERASI employs the following ointment or wash in the treatment of impetiginous eczema:

R.—Picric acid . . . 4 grains.
Sulphuric ether, enough to dissolve it.
Lanolin . . . 18 drachms.

Or,

R.—Picric acid . . . 7 to 15 grains.
Sulphuric ether, a sufficient quantity to make a solution.
Rose-water . . . 5 ounces.

Transmission of Tuberculosis from Mother to Fetus.—CSOKAR has recently presented to the Imperial Society of Physicians in Vienna a pathological specimen which he believes proves with certainty that the bacillus of tuberculosis may pass into the fetus from a tubercular mother. A cow which was advanced in pregnancy suffered from pulmonary tuberculosis and died from this disease. The fetus showed, in its hepato-duodenal

ligament, lymphatic glands which were partly caseous and partly calcified. There were a large number of tubercles and round cells with the tubercle bacilli. The fact that infection occurs through the umbilical vessels Csokar thinks of interest.

Treatment of Diphtheria.—In St. Bartholomew's Hospital reports for 1890, which have just been published, may be found a paper by Ogle and Willoughby upon this subject. The patients upon whom the study was based numbered twenty-two and occurred in the wards of Sir Dyce Duckworth. The cases were all extremely grave and the operation of tracheotomy was only resorted to when other measures appeared unavailing. The importance of early recourse to this operation is emphasized; the main indication for it being cyanosis. Ogle insists very strongly upon the use of a spray of a solution of bicarbonate of sodium with borax, in the proportions of ten grains of each to the ounce of water, for the purpose of disintegrating the membrane. Its employment is usually followed by the expectoration of creamy mucus containing shreds of membrane. Papain solution also proved very serviceable. The value of free stimulation was marked in all the cases, brandy being given in a dose varying from one to three ounces mixed with milk, beef or mutton essence and yolk of egg every four hours by means of a soft nasal tube. Jelly and custard were the first articles of food given by the mouth. The medicines employed were perchloride of iron and strychnine in full doses. These observers think that the importance of feeding by the nose in the early period after tracheotomy is not as yet fully appreciated.

Injections for Gonorrhœa and Leucorrhœa.—According to *L'Union Médicale*, LUTAUD recommends the following prescription in gonorrhœa and leucorrhœa in the later stages of these diseases:

R.—Creolin . . . ¼ drachm.
Extract of hydrastis canadensis 2½ drachms.
Water . . . 8 ounces.

Add two teaspoonfuls to a pint of hot water and use as an injection in leucorrhœa. In gonorrhœa in the male the following formula is useful:

R.—Creolin . . . 10 drops.
Extract of hydrastis canadensis ½ drachm.
Distilled water . . . 8 ounces.

This solution is to be employed without dilution as a urethral injection.

Treatment of Syphilitic Pharyngitis.—According to *L'Union Médicale*, CREQUY has used with great success the following tablets of the protiodide of mercury and chlorate and iodate of potassium in the treatment of mucous patches in the mouth and pharynx:

R.—Protiodide of mercury . . . ¾ grain.
Chlorate of potassium . . . 3 grains.
Iodate of potassium . . . ¼ grain.
Chocolate, a sufficient quantity to make a tablet.

One or two of these tablets may be taken each day after a meal. Care, of course, should be taken that severe mercurialism does not result.

CURRENT LITERATURE.

SATURDAY, APRIL 4, 1891.

TREATMENT OF PLACENTA PRÆVIA.

EVERKE says the cause of placenta prævia is to be found in the possibility of the ovum falling from the fundus to the cervix, and developing there. Hence it is more frequent in multiparæ with large uterine cavities, and especially when previous catarrh has made the mucous membrane smooth. Everke has observed placenta prævia in such a patient three times in succession.

Hæmorrhage constitutes the greatest danger to the mother. The open vessels at the seat of the placenta easily absorb septic matter, and hence women with placenta prævia are especially subject to puerperal septicæmia. The danger to the child, of course, is from asphyxia.

Bleeding may occur in two ways. In the latter months of pregnancy the lower uterine segment may be drawn upward, and the placenta, being unable to stretch as much as this part of the uterus, may be separated from its base of attachment. In labor the placenta is separated by the dilating pains.

Treatment must meet two indications, first to save the mother from death by hæmorrhage, and second, to rescue the child from its threatening position. The first must be achieved, if necessary, by the sacrifice of the child. The physician who pays least attention to the child's life will save the life of the most mothers.

If the pains are strong, the position of the foetus longitudinal, and the mouth of the womb dilated to the size of a five-mark piece, the bleeding can usually be controlled by rupturing the membranes. As soon as the membranes are ruptured the tearing of the lower pole of the ovum ceases, and there is no further loosening of the placenta. The uterine contractions press the presenting part against the os and the placenta, and the bleeding surfaces are effectually tamponed. Birth is then usually spontaneous. Rupture of the bag of waters is contra-indicated when the pains are weak, and when the os is not sufficiently dilated, as then tamponing would not occur, and version would be rendered more difficult.

Version is performed in placenta prævia with the view of making compression upon the bleeding spot. If the os is almost or completely dilated, the hand can be easily introduced and either rupture the membranes at the side of the placenta, or perforate the placenta, and bring down a foot. In all such cases the bleeding usually ceases. If hæmorrhage still continues, gentle traction should be made upon the foot. When the foetal heart-sounds are good, slow extraction should follow version, as rapid extraction is a source of danger to the mother by producing atony of the uterus.

If the os is sufficiently dilated to admit two fingers, the mother may be saved from her dangerous position by two procedures—*accouchement forcé* and

combined version. The first is recommended by Spiegelberg, and consists in slowly stretching the os from below backward, which is generally yielding in these cases, using first two, then three, and then four fingers. The hand of the accoucheur thus acts as a preliminary tampon. After careful stretching of the os, the hand is introduced into the uterine cavity, the foot grasped, and the foetus turned. This procedure is only to be undertaken when the os is soft and yielding, and is always dangerous, as the cervix may be torn, followed by death of the woman from cervical hæmorrhage after the child's birth. Hence this method has been generally superseded by Braxton Hicks's method of combined version. Everke thinks this method the best, as it permits of early intervention, and can be performed with only one or two fingers within the os. The woman, therefore, loses but little blood, and so has left greater resisting power. It is certain, also, to control the bleeding. Post-partum hæmorrhage and cervical tears are avoided, the uterus is evacuated gradually, and no uterine atony results, and, as subsequent tamponing to control hæmorrhage is no longer necessary, the danger of septic infection is obviated. By the old method, in which tampons were sometimes employed for days while the os slowly dilated, there was great danger of septic infection because of the proximity of the tampons to the large placental vessels. This explains many deaths which have occurred in the puerperium; nevertheless tamponing is still necessary in rare cases in which the os is not dilated sufficiently to admit one or two fingers, and in which the os is so rigid that it cannot be easily stretched. When tamponing is necessary it should be preceded by careful cleansing of the genitalia, evacuation of the bladder, and washing out of the vagina. Strips of iodoform gauze should be pushed in rapidly, being followed by pledgets of cotton, so as to fill the vagina as soon as possible. In a few hours the cotton is removed, by which time usually the os is sufficiently dilated to permit of the termination of labor.

If the physician does not feel sufficient confidence in himself to perform combined version, he may succeed by external version, if the membranes are intact, the child small, and the head not fixed.

Hæmorrhage after birth should be rare, if extraction is slow. If it occur, however, the cause should be sought for. If there are lacerations, these should be repaired, and if atony exist, tamponing, according to Dührssen's method, is the surest, simplest and safest way of overcoming it. In cases in which placenta prævia is recognized in pregnancy, Everke recommends the induction of premature labor, on account of the liability to sudden hæmorrhage, which may occur when medical aid is not at hand. Labor should then be induced by the gradual introduction of one or two fingers, and the foot seized and brought down. In one case Everke was unable to grasp the foot after the induction of premature labor and external version, as only one finger could be introduced. He thereupon inserted a Sims speculum, fixed the os with two bullet-forceps, and then grasped the foot with a pair of dressing forceps,

and, so, easily drew it into the cervical canal. No further bleeding occurred, and the foetus was delivered in about twelve hours.

The dangers of anæmia are to be overcome by infusion of salt solution, either into the veins or into the cellular tissue, as recommended by Münchmeyer. — *Therapeutische Monatshefte*, February, 1891.

OBSERVATIONS UPON THE ETIOLOGY OF ACUTE ARTICULAR RHEUMATISM.

WAIBEL remarks upon the growing belief in the supposition, first expressed by Hirsch, that acute articular rheumatism is an infectious disease. The exciting cause of the disease, which is yet undiscovered, cannot affect individuals entirely healthy, but only such as are in a depraved state, or are under special or general injurious influences. The predisposing injurious influences of a general nature are: The season of the year, and the prevailing meteorological conditions, as well as various other unhygienic conditions. The predisposing factors affecting individuals are: Age, sex, vocation; whether the person lives in the city or country, or has passed through a previous attack of rheumatism; heredity, and diseases of the mucous membrane of the digestive tract.

Waibel admits that his experience is limited to one hundred and twenty-one cases of rheumatism, but as he has been able to study these in person and to follow the patients into their dwellings, and so study the etiology with greater care, these facts make up for the relative paucity of numbers. These one hundred and twenty-one cases occurred in sixteen years, from 1874 to 1889 inclusive. There were more attacks in January and March than in other months, and the fewest in September. As regards season, more occurred in winter and spring. So far Waibel's statistics agree with the general experience of other observers, and appear to indicate that cold and wet operate to produce rheumatism. The writer, however, denies that they have any direct influence, but says they may act by favoring the growth and development of the cause of the disease. He also thinks it very probable that meteorological conditions favor the spread of the exciting cause of rheumatism in the same manner as they do the microorganisms of other diseases.

He says the indirect influence of meteorological conditions are much more important than the direct. In very bad weather men remain more at home, and the result is the crowding together of a number of persons in badly-ventilated rooms, in which the air and the floors are foul, not only from soiled and wet clothing, but also because the lighting, heating, cooking, and washing are all done in the living-room. In addition to these causes there are often found in these houses decomposing animal and vegetable materials and excreta, which also vitiate the atmosphere and contribute to the development and growth of disease germs. The patient generally attributes the attack to cold, which belief is deeply rooted in the minds of both physicians and laymen, partly from ignorance and partly from long-established habit.

Waibel's investigations as to the position, moisture, and age of the dwellings in which cases of acute articular rheumatism developed, are surprising. He finds that more cases occur in the high, dry, and old houses. Of his one hundred and twenty-one cases, eighty-two occurred in houses in high situations, as opposed to thirty-nine in low-lying houses; ninety-three in dry, and only twenty-eight in moist houses; one hundred and fifteen in old, and six in new houses.

Sex has no influence; sixty cases occurring in men and sixty-one in women. As regards age, more cases occurred in the decades from ten to twenty and from thirty to forty, and fewer in the decades from sixty to eighty.

Seventy-four of the patients were hard laborers belonging to the agricultural and industrial classes, while forty-seven were not over-exerted by their work. No special calling, however, appeared to predispose to rheumatism. Waibel has observed very few cases in factory hands, notwithstanding the fact that they are poorly clad, and frequently have to travel long distances in cold and wet weather, and then stand long hours in wet shoes and clothing. This exemption is, in his opinion, due to the fact that they do not have to work very hard, and also because they are away from their dwellings during the whole day.

Kunz's statistics of the morbidity for the cities of Swabia and Neuberg for 1884 indicate that acute articular rheumatism affects about equally the industrial and agricultural classes, while the house servants are more affected. According to the same statistics for 1885, the industrial were more affected than the agricultural laborers, and of the former more cases occurred among brewers, joiners, and millers. A large number of cases occurred among soldiers.

According to Professor Strümpell, servant girls, waiters, and coachmen are especially disposed to acute articular rheumatism.

As regards residence in city or country, seventy-nine of Waibel's cases occurred in city-dwellers and forty-two in people living in the country. His statistics give no information as to the influence of heredity, although he suggests it may have an influence through the transmission of a weakened constitution. A previous attack is a well-known predisposing cause. The greatest number of attacks observed in one patient was seven in fifteen years, two of them occurring in one year.

Waibel has frequently observed that disturbances of the digestive tract precede an attack of rheumatism, and he thinks it very probable that this favors the invasion of the disease-germ. His observations do not warrant him in expressing a positive opinion as to the contagiousness of rheumatism. He thinks it highly probable that the contagium belongs to the contagious-miasmatic class of infections. He has never seen anything which justified the belief that rheumatism is epidemic. There has, however, been an increase of the disease in the past ten years, a fact which has also been observed by Port, in the Bavarian garrison. — *Münchener med. Wochenschrift*, February 3, 1891.

PLEURISY IN CHILDREN AND ITS TREATMENT.

SIMON, in *Le Progrès Medical*, January 31, 1891, says that typical pleurisy with well-marked symptoms is of extreme rarity in children. In them it is rare to observe other than secondary pleurisies, consecutive either to lesions of the lungs, pneumonia, broncho-pneumonia, tuberculosis, or to the infectious diseases, measles, whooping-cough, scarlet and typhoid fevers. Together with the pleural inflammation, there is nearly always a simultaneous inflammation of the bronchi and lung. The pleurisy presents a most remarkable tendency to encystment, which renders the diagnosis very difficult. Several of the symptoms which are prominent in the adult are absent in the child. Thus, in the beginning, instead of complaining of pain at some point in the side, the child complains of a pain in the abdomen, or in the flank. Its respiration is accelerated, the respiratory movements reaching the number of 30 to 40 per minute; the temperature rises to 38° or 38.5° C. The child coughs a little, and seems to suffer in coughing. On inspection, the affected side is more or less immobile, its movements being limited. A little later, when the effusion is increased, the side shows a slight bulging. Percussion, when the effusion is abundant, gives an extended dullness. On auscultating the chest, the friction—the important initial sign in the adult—is hardly ever perceived in the child. When it is heard, it is in the late period, that of resolution. An important symptom is the suppression of the vesicular murmur, a suppression which makes a strong contrast to the puerile respiration of the healthy side. The pain in the belly, the fever, the dyspnoea, the extended dullness, and the suppression of the vesicular murmur, are the prominent symptoms of the early stage.

The frequent association of the disease with an inflammation of the bronchi and lungs renders the diagnosis a matter of great difficulty. However, the duration of the malady will reveal its nature. A frank pneumonia will be recognized in some days; a broncho-pneumonia, even, does not persist during three or four weeks with this fixity of position. A pleurisy, however, remains localized for five or six weeks, or longer. The termination is usually by suppuration, the fever persisting with irregular oscillations; at no time, however, tending to exceed 38.5° C. It is important to note this relatively low temperature, which exists notwithstanding the suppuration. Pus, once formed, shows even a greater tendency to encystment than does a serous effusion. The seat of this encystment may be posteriorly or anteriorly, in the axilla, in the middle portion of the chest, or even under the clavicle. After its encystment it frequently discharges spontaneously, either toward the skin, or toward the bronchi, or simultaneously toward the bronchi and skin. The prognosis of pleurisy in the child is relatively very favorable. Its gravity at first depends upon the associated broncho-pneumonia. Later, when there is suppuration, death may ensue from cachexia, asphyxia, or opening of the abscess into the pericardium or mediastinum, if the effusion is unrecog-

nized. But if the diagnosis is made, if proper treatment is instituted, cure ordinarily follows, even in the gravest cases, such as secondary pleurisies, pleurisies associated with profound cachexia, or even double pleurisies.

The treatment in the first stage should be hygienic and medical. Avoidance of chilling of the surface, and the use of hot drinks, with calomel one-sixth to three-quarters of a grain every two or three days to produce a slight laxative effect, and digitalis, ten to twenty drops of the tincture, as a diuretic and antiphlogistic. In the second stage, when pus has formed, it may be necessary to perform thoracocentesis. The point of election for the puncture will usually be in front of the axillary line, instead of, as in the adult, at the union of the posterior third and the anterior two-thirds. Thorough antiseptics should be practised, to avoid further infection of the system. If necessary, an incision should be made and thorough drainage instituted, antiseptic precautions being observed.

REVIEWS.

SAUNDERS'S QUESTION COMPENDS: ESSENTIALS OF SURGERY. By EDWARD MARTIN, M.D. Fourth Edition. Illustrated, Revised and Enlarged, with an Appendix of Prescriptions, etc. Philadelphia: W. B. Saunders, 1891.

The fact that Dr. Martin's question-book upon Surgery has passed in two years through three large editions, and that the publisher has found it necessary to issue another addition at this season of the year, points to its popularity not only with students but with a certain number of physicians. It is useless for us to repeat the commendations which were called forth by the earlier editions, and it only remains to call attention to the exceedingly useful appendix which has been added to the present issue, which contains a large number of prescriptions applicable to many diseases, and in addition a list of drugs and materials used in antiseptic surgery, together with general directions concerning preparations for antiseptic procedures. The average practitioner and the student will find this last portion of the book equally attractive with the first, and we are convinced that the fourth edition will be as thoroughly appreciated as its predecessors.

DIABETES: ITS CAUSES, SYMPTOMS AND TREATMENT. By CHARLES W. PURDY, M.D. Illustrated. Philadelphia: F. A. Davis, 1890.

The subject of diabetes is one of such universal interest to medical men that any book which deeply yet clearly discusses the causes, symptoms, and treatment of this disease cannot fail to be popular with physicians. While many monographs have been published which have dealt with the subject of diabetes, we know of none which so thoroughly considers its relations to the geographical conditions which exist in the United States, nor which is more complete in its summary of the symptomatology and treatment of this affection. A number of tables showing the percentage of sugar in a very

large number of alcoholic beverages adds very considerably to the value of the work.

THE YEAR-BOOK OF TREATMENT FOR 1891. A Critical Review for Practitioners of Medicine and Surgery. Philadelphia: Lea Bros. & Co., 1891.

To most of the subscribers of THE MEDICAL NEWS the *Year-book of Treatment* is a familiar publication, and well worthy of a place upon the desk of every practising physician. The present year-book differs from its predecessors in that it is almost twice as large, and therefore contains a more complete *résumé* of the therapeutic literature of 1890. Under the skilful handling of Dr. T. Mitchell Bruce, the first article in the volume, upon "Diseases of the Heart and Circulation," serves the excellent purpose of making one familiar with the latest studies concerning this important portion of the body when affected by disease, and it is only necessary to state that among the other contributors are such men as Malcolm Morris, Edmund Owen, Reginald Harrison, and James Ross, to make one feel that the princes of English medicine have gathered together for their medical brethren all that is good, to the exclusion of everything that is useless.

CORRESPONDENCE.

NEW YORK.

As might naturally be expected, this winter has witnessed the presentation of an unusual number of papers on the subject of tuberculosis; but even before the memorable announcement of Koch's great discovery of the lymph treatment, I had been struck with the value of some of the papers which have been presented here to some of our medical societies, showing the direction of current thought. Whatever may be said in the way of criticism of these investigations, and of the conclusions which have been drawn from them, it is certainly most refreshing to learn that a diagnosis of phthisis is no longer to be considered as necessarily synonymous with the death-knell of the patient. It is also encouraging to be told that these new and optimistic views are not based upon some recent and fantastic method of treatment, but are founded upon a patient study of Nature's methods of bringing about a cure of tuberculous processes under favorable conditions.

One of these suggestive papers was entitled, "Some of the Facts in the Etiology of Tuberculosis," and embodied the results of experiments which had been made by Dr. H. P. Loomis. In his communication, which was read before the Bellevue Alumni Association, he narrated the histories of a number of cases in which the bronchial nodes or glands were the primary seat of lesion. In one case, that of a vigorous man who died in an attack of acute lobar pneumonia, the autopsy, made a few hours after death, showed that the organs were normal, and no evidences of tuberculosis existed except in the enlargement of the bronchial nodes, and even these presented no gross lesions of tuberculosis. The existence of tuberculous material in these nodes was, however, proven by inoculation experiments. As the determination of the bacilli in the sputum in cases

where these organisms are present in small numbers is a matter of considerable difficulty, and one into which the personal equation enters very largely, Dr. Loomis preferred to make use of inoculation experiments to ascertain the presence of tuberculous material. A series of thirty autopsies made upon persons dying of acute diseases, or as a result of violence, showed that eight had tubercle bacilli in the bronchial nodes, although none of them exhibited any evidences of tuberculosis anywhere else. In the discussion which followed the reading of this paper, Dr. H. M. Biggs said that there seemed to be no organ or tissue in the body which might not be primarily affected by tuberculosis. In the autopsies which he had made at the various charity hospitals of this city, he had found that 60 per cent. of all the deaths occurring in these institutions showed tubercular lesions, and yet less than one-half of these had died of tuberculosis. He had been informed that in the Vienna General Hospital such lesions were found in 85 per cent. of all the autopsies. That this was not simply a dead-house view of the subject was apparent when one recalled that Dr. Austin Flint's large clinical experience had led him to a very similar conclusion.

I mention some of the more important points brought out in this discussion, because it was a most fitting preliminary to the study of the treatment by Koch's "lymph," which only ten days later was made known to the world. This matter of the "lymph" treatment has been so fully set forth to your readers that doubtless they feel that it is time to cry "enough;" but I think it will not be without interest to them to read a statement of the results obtained so far in the use of this "lymph" by Professor A. L. Loomis. It is well known that this gentleman is not easily aroused to such a pitch of enthusiasm that it will prevent him from discussing dispassionately and scientifically the results obtained in any new departure in therapeutics. I have heard him speak of his cases from time to time, and he has fully sustained his reputation in this particular. A few days ago he exhibited to his students two men who had been under Koch's treatment for a period of five weeks. Both of them had unmistakable physical signs of phthisis at the beginning of the treatment, along with tubercle bacilli in their sputum. One of them had received in all thirty-two injections, the dose at first being one milligramme, but afterward it was increased to five. At first his physical signs were aggravated, but for the last three weeks he had steadily improved, and the physical signs were now very slight. The patient had gained eight pounds in flesh. The second patient received altogether seventeen injections in varying doses, the largest being ten milligrammes. A similar change for the worse was noticed in the physical signs in his case after the first injections, but the signs of consolidation had almost entirely disappeared, as had also the bacilli from his sputum, and he had gained twelve pounds in weight. Two plans of treatment—viz., small doses at short intervals and large doses at longer intervals—had both been tried, but there was apparently no great difference in the effect, except that the reaction after the small doses was naturally less severe.

I have been unable to learn of any deaths which have been considered, on good medical authority, to have

been directly due to the injections of the "lymph," but a number of deaths among patients in the advanced stages of tuberculosis who were undergoing this treatment have been reported. It is reasonable to suppose that in such debilitated subjects, the injections of this fluid, as Professor Loomis distinctly states, exerting so powerful a depressing effect upon the heart and system generally, may have hastened the fatal issue. Whether this be true or not, it is hard to say on what grounds one officious coroner has felt called upon to issue notices to the effect that he will investigate all deaths occurring in patients undergoing this treatment. There is certainly nothing in the law which defines the functions of the coroner which can be so construed.

There is, of course, much difference of opinion as to the effects of the injections, but it is significant that those who have had most to do with this treatment are in general most emphatic in stating that the method of Koch should only be employed in hospitals, where the cases can be closely watched and intelligently nursed.

It goes almost without saying, that special hospitals for carrying out this treatment will be speedily established, and I have to note that the first one of this kind in this city was opened on February 4th. It is called the Koch Institute, and is under the charge of Dr. Alexander I. Aronson. The building will accommodate thirty-five patients, but no cases of advanced disease will be taken, as they are obviously unsuited for this treatment.

I have had considerable to say in recent communications about the new building of our Academy of Medicine. The prosperity of the Academy seems to have fully justified the efforts made to secure this new and beautiful home. It was the scene of another pleasant gathering some weeks ago, to listen to the inaugural address of its President, Dr. Alfred L. Loomis. The property of the Academy is now valued at about \$400,000, with a debt of only \$30,000. The membership is rapidly increasing, and many of the more energetic members are anxious to concentrate and centralize medical thought and influence here. To aid in carrying out this wish, the President suggested in his address that the various private medical societies which now divert the energy of the profession into many different channels, should be taken into the Academy as sections, where they would be more honored and more influential.

The address also contained two other important suggestions as to the future work of the Academy, viz.—first, that it should establish a reliable nurse bureau, and, secondly, that it should issue a monthly bulletin of its "transactions," somewhat after the plan adopted in a similar publication issued by Johns Hopkins. These latter propositions, I think, are likely to meet with favorable consideration, but the first suggestion will more than likely provoke much opposition.

ST. LOUIS.

COMMENCEMENT season is as eventful a time for the colleges as for the graduates.

On the 10th inst. the St. Louis College of Physicians and Surgeons held its twelfth annual commencement exercises at Memorial Hall. Sixty-eight diplomas were

awarded to representatives of thirteen different States of the Union and two foreign countries.

On the 12th inst. at the same hall were held the forty-ninth annual commencement exercises of the St. Louis Medical College and the twenty-fifth of the Missouri Dental College. The medical graduates, after a three years' graded course, numbered sixteen. There were twenty-seven dental graduates.

The thirty-second annual commencement of the Homœopathic Medical College of St. Louis was held the same evening (March 12th) at Pickwick Hall. There were fifteen graduates, of whom three were ladies.

Saturday evening, March 14th, the Marion Sims College of Medicine held its first annual commencement exercises at Memorial Hall, graduating a class of thirty-one members. Over one hundred and fifty students have matriculated at that school during the last year, the largest number, it is claimed, ever enrolled at any medical college during the first year of its existence.

Tuesday, March 17th, the examinations will be held of applicants for positions as assistant physicians in the City and Female Hospitals; three positions are to be filled at the latter and eight at the former institution. These examinations are held at the offices of the Health Department in the City Building, under the direction of the medical members of the Board of Health, and are written examinations.

Quite a sensation has been caused by the outbreak of a smallpox epidemic in our city hospital within the last few days.

A man named Campbell was sent to the hospital with what was supposed to be malarial fever, and had been there three or four days before his ailment was recognized as smallpox. By that time others in the ward had become infected, and in all there have now been taken to the Quarantine Hospital from the City Hospital ten cases, together with a half-dozen others from outside. The first case has terminated fatally. The physicians and officers of the Health Department are putting forth every effort to trace out the associations of the cases which have been brought in from outside, with a view of preventing further extension of the disease if possible.

An interesting case against an accident insurance company is now before the United States Circuit Court here, involving some elements of special interest to the medical profession.

In November, 1888, Dr. George Bernays, of this city, cut his finger while performing a surgical operation. Erysipelas set in, and he died within thirty days. Mrs. Bernays demanded of the United States Mutual Accident Association the sum for which the doctor was insured, claiming that his death was the result of accident.

The company admit the cutting, but deny that he was seized with erysipelas then, claiming that he had had the disease nearly all his life. They claim further that as "there was no visible mark on his hand at the time of his death" there is no liability upon them to pay the insurance by reason of a stipulation in the contract or policy.

The rulings of the court and the final decree in this case will be of interest to physicians throughout the country, and will have a material effect upon the readiness of physicians to take accident insurance policies.

COLORADO FOR CONSUMPTIVES.

To the Editor of THE MEDICAL NEWS,

SIR: The question, Where should a consumptive go? was asked me by one of my patients some four months since, and his rapid emaciation—averaging one and a half pounds' loss every week for six months—warned me that an immediate answer was of pressing importance. I had heard and read a little of the favorable influences exerted on this class of patients by the sunny and dry climate of Colorado Springs. I received the impression that probably there was no more favorable spot for the consumptive known within the boundaries of this country; but before deciding a question of such importance, I asked the advice of Professor William Pepper, who replied that he considered the removal of the patient to Colorado Springs the best thing that could be done. Preparations for the journey were hastily made, and within ten days we left Oxford, Pa., for Colorado Springs.

After four months' residence at this place, the emaciation has been arrested, and for a month past there has been an increase in weight, and an improvement in the lung disease, thus cheering the patient and giving him promise of final recovery.

The tendency of this case was rapidly downward, and there seemed no reasonable hope for a favorable change in the climate of the East. It is scarcely worth while for me to fill your pages with an account of the beneficial influences of the climate shown in this case. It is simply a repetition of what has occurred in many hundreds of cases during the past twenty years. There is scarcely a family living at Colorado Springs that has not in it a similar example of a life saved and restored to health by the invigorating atmosphere of this place.

I am sure no one can yet say positively to what the cure of so many cases of consumption is due. We see healthful climate, soil, and surroundings combined here as they are nowhere else. First, the town is situated on a plateau, the elevation of which is six thousand feet, protected on the north by bluffs and the Great Divide, and on the west and southwest by the Rocky Mountains, which average ten thousand feet or more in height, and on the south and east there is an unbroken expanse of plains for many hundreds of miles. The high elevation of the place and the consequent rarefaction of the atmosphere is undoubtedly beneficial to consumptives by causing habitual deep inspirations, in order that the blood shall be sufficiently oxygenated. The surroundings protect the city from severe northwest winds, and insure a purity of atmosphere which is not excelled. The cool nights of summer give refreshing sleep and rest, and the unclouded skies and bright sunshine of every winter day permit daily outdoor exercise throughout the winter. Even when the patients are too weak to leave the house the windows can be opened on many days, and thus they are benefited by the sunshine and fresh air.

Colorado Springs has under it a stratum of gravel between fifty and seventy feet in depth, in consequence of which mud is unknown, and the drives and walks are as dry and smooth as if made of concrete. While showers are not uncommon in May, June, and July, the sun is seldom clouded for more than an hour or two at a time and dews are almost unknown.

Colorado Springs is strictly a health resort, and the authorities have always wisely kept this in view, and have endeavored, in every possible manner, to add to the reputation and value of the city as a place for the sick. The streets are one hundred feet and the avenues one hundred and forty feet wide.

The water supply, of the purity of which there can be no question, comes from streams fed by melting snow from the mountain peaks and is sufficient for a city ten times the size of Colorado Springs. The sewerage system of the city is complete.

Compared with other Colorado cities, such as Denver, Pueblo, and Trinidad, this city must always be in the lead as a health resort, as it can never be a manufacturing place of much importance.

The mining and manufacturing industries have made Denver a great city, and will also place Trinidad and Pueblo in a few years among the great mining and manufacturing cities of the United States. For these reasons Denver, Pueblo, and Trinidad are objectionable as health resorts. The winds are higher and the winters colder in Denver, and the summer nights are not so cool as they are in Colorado Springs. The ground also becomes muddy after rains.

Pueblo and Trinidad are very hot and dusty in summer, and there is considerable mud after rains. Among the cities named, Colorado Springs is the only one that can claim to have an abundant and safe supply of drinking-water.

It is an admirable place for homes. Colorado Academy and Colorado College, both of which occupy a high place among the academies and colleges of this country, are situated here. A splendid system of graded schools is maintained, and the public school buildings are magnificent. Almost every religious denomination is represented, and each has a handsome church.

Among the public buildings are two large sanitariums and the State institution for the education of the deaf and dumb. The managers of the Printers' Home have secured eighty acres of land near the city on which their buildings will soon be erected. New electric street-cars now run at intervals of from ten to forty minutes to Manitou, Cheyenne, Canons, Broadmoor, Roswell, and Austin Bluffs. The street railway will soon be extended to all other near places of interest.

Six railroads enter the city and more are to be built. The population is about twelve thousand, and it is said that no other city of this size contains a more intelligent and moral class of people. The sale of liquors as a beverage, within the city limits, is prohibited.

As a place for business: I would like to caution those contemplating coming here and expecting to find employment. Many are sadly disappointed. Small resources are soon exhausted, and funds must be provided by the kind people of the place for the return of many unfortunates to their friends. Others are able to secure some kind of employment by which they can live, and some are so fortunate as to get into a profitable business and become wealthy.

A severe struggle to keep the wolf from the door is not conducive to restoration of health, and invalids should carefully consider this question before coming. For the poor, however, who are able and willing to accept any kind of honorable employment, and are

plucky and not easily discouraged, there is health and work here yet for many thousands.

(S. W. MORRISON, M.D.)

COLORADO SPRINGS, COLORADO.

NEWS ITEMS.

Medical Ophthalmoscopy.—Dr. George E. de Schweinitz has been appointed Lecturer on Medical Ophthalmoscopy in the University of Pennsylvania, in order that thorough instruction in the use of this important aid to diagnosis may be given to the students. In addition to his regular lectures, the class will be divided in such a way as to permit of individual teaching. The appointment is particularly appropriate, since Dr. de Schweinitz has for a number of years been greatly interested in this subject.

Meeting of the National Association of Railway Surgeons.—At the Kansas City meeting of the National Association of Railway Surgeons last year, it was decided to hold the next meeting at Buffalo, May 7th, 8th, and 9th of this year. But, on account of the meeting of the American Medical Association being set for the same time, it has been decided to change those dates, and to hold our next meeting at Buffalo, April 30th and May 1st and 2d, to which all railway surgeons are cordially invited. To all railway surgeons sending their names and addresses to the Corresponding Secretary, a copy of the constitution and programme will be sent. All those wishing to read papers should send in the titles of their papers without delay. For further information inquire of

A. G. GUMAER, M.D.,

Corresponding Secretary.

BUFFALO, N. Y.

Obituary.—DR. CHARLES T. PARKES, Professor of Surgery in the Rush Medical College of Chicago, and for many years one of the most prominent surgeons in the State of Illinois, died on March 28th, of pneumonia and pleurisy, after a very short illness. The beginning of his illness was an attack of influenza, which was ignored until it forced him to take to his bed.

Dr. Parkes was graduated from the University of Michigan in 1862, and was actively engaged in recruiting troops for some years. After this he took a degree in medicine from the Rush Medical College in 1867. In addition to having gained prominence as a medical teacher, he carried out a series of valuable experiments upon gunshot wounds of the abdomen. The scope of his clinical work was very wide, and a number of reports of his clinics have appeared in THE MEDICAL NEWS within the last two years.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 24 TO MARCH 30, 1891.

HOFF, J. VAN R., *Captain and Assistant Surgeon*.—The leave of absence for seven days, granted in Orders No. 61, *c. s.*, Fort Riley, Kansas, is extended twenty-three days.—Par. 3, *S. O. 36, Department of the Missouri*, March 27, 1891.

By direction of the Acting Secretary of War, CHARLES R. GREENLEAF, *Lieutenant-Colonel and Assistant Medical Purveyor*, will proceed to New York City on public business, thence to Boston, Mass., to represent the Army Medical Department at

the American Association for Physical Education, and, upon the completion of the duties contemplated, will return to his station in this city.—Par. 3, *S. O. 67, A. G. O., Washington, D. C.*, March 25, 1891.

By direction of the Acting Secretary of War, EUGENE L. SWIFT, *First Lieutenant and Assistant Surgeon*, now on duty at Fort Thomas, Arizona Territory, will report by letter to the commanding officer Fort Grant, Arizona Territory, for duty at that station, or at Fort Thomas, Arizona Territory, as the commanding officer may direct.—Par. 7, *S. O. 66, A. G. O., Washington*, March 24, 1891.

By direction of the Acting Secretary of War, the retirement from active service this date, by operation of law, of HENRY JOHNSON, *Captain and Medical Storekeeper*, under the provisions of the Act of Congress approved June 30, 1882, is announced.—Par. 5, *S. O. 66, Headquarters of the Army, A. G. O., Washington*, March 24, 1891.

By direction of the Acting Secretary of War, the leave of absence granted ROBERT J. GIBSON, *Captain and Assistant Surgeon*, in Special Orders No. 232, *A. G. O.*, October 3, 1890, from this office, is extended one month.—Par. 10, *S. O. 65, A. G. O., Washington*, March 23, 1891.

By direction of the Acting Secretary of War, JOHN H. BARTHOLF, *Major and Surgeon*, now on duty at Plattsburgh Barracks, New York, will proceed to Fort Wayne, Michigan, and report in person to the commanding officer of that post for temporary duty.—Par. 7, *S. O. 64, A. G. O., Washington, D. C.*, March 21, 1891.

TILTON, HENRY R., *Major and Surgeon*.—Is hereby granted leave of absence for one month, on surgeon's certificate of disability.—Par. 5, *S. O. 56, Headquarters Division of the Atlantic*, March 21, 1891.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MARCH 28, 1891.

AMES, HOWARD E., *Passed Assistant Surgeon*.—Promoted to Surgeon, March 19, 1891.

WHITE, STEPHEN S., *Passed Assistant Surgeon*.—Ordered to the U. S. "Baltimore."

PICKERELL, GEORGE MCC., *Assistant Surgeon*.—Promoted to Passed Assistant Surgeon, March 25, 1891.

MARTIN, WILLIAM, *Surgeon*.—Ordered to Naval Rendezvous, San Francisco, Cal.

WHITE, C. H., *Medical Inspector*.—Appointed Fleet Surgeon Pacific Station.

HARRIS, H. N. T., *Assistant Surgeon*.—Ordered to the U. S. Receiving-ship "St. Louis."

PICKERELL, GEORGE MCC., *Passed Assistant Surgeon*.—Ordered to Naval Hospital, New York.

RUSH, C. W., *Passed Assistant Surgeon*.—Ordered for duty with the Inter-Continental Railway Commission.

OGDEN, F. N., *Passed Assistant Surgeon*.—Ordered for duty with the Inter-Continental Railway Commission.

NORTH, JAMES H., JR., *Assistant Surgeon*.—Ordered to the Navy Yard, New York.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will be liberally paid for upon publication, or 250 reprints will be furnished instead of payment, provided request for reprints be noted by author at top of manuscript. When necessary to elucidate the text, illustrations will be provided without cost to the author.

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